Emergency Vehicle Operations Course Instructor Manual

Commission on Peace Officer Standards and Training
January 1999

The mission of the California Commission on Peace Officer Standards and Training is to continually enhance the professionalism of California law enforcement in serving its communities.

Published 1989
Reprinted January 1994
Revised January 1999

For information about copies of this publication, contact:

POST Media Distribution Center
1601 Alhambra Boulevard
Sacramento, CA 95816
(916) 227-4856

Commissioners

RICK TERBORCH, CHAIRMAN	Chief Arroyo Grande Police Department
DAVID C. ANDERSON	Sergeant Los Angeles County Sheriff's Department
MICHAEL T. CARRE	Investigator Orange County District Attorney's Office
PHILIP DEL CAMPO, Ph.D.	Public Member
TED HUNT	Director Los Angeles Police Protective League
THOMAS J. KNUTSON, Ph.D.	Professor of Communication Studies California State University, Sacramento
WILLIAM B. KOLENDER	Sheriff San Diego County
BILL LOCKYER	Attorney General
JAN SCULLY	District Attorney Sacramento County
KENNETH J. O'BRIEN	Executive Director

Preface

Driving a law enforcement vehicle in routine and emergency situations is a very demanding task. Each law enforcement officer must have the best training available. Effective driver training requires well-qualified instructors. The Commission on Peace Officer Standards and Training (POST) has designed this *Emergency Vehicle Operations Instructor Manual* to provide a foundation for the competent instructor.

The rapid increase in the number of civil suits and the large monetary awards related to driving are a primary concern of law enforcement agencies. Adverse court decisions are the result of many factors:

1) The adequacy of the collision investigation,
2) The competence of the attorney,
3) Law enforcement community relations,
4) The level of competence of the law enforcement officer as a driver.

The competence of a law enforcement Emergency Vehicle Operations Course (EVOC) training instructor is the focus of this manual.

The competence of a law enforcement officer as a driver has been challenged on the basis of documented factors. Either no training was provided, or the training was inadequate in some way:

1) The training for a physical performance task was restricted to classroom lectures,
2) The training did not address the cause of the collision at hand, and so forth.

In defense, training administrators, at times, were unable to provide documentation to establish the validity of the driver training, nor could they show common training standards across similar agencies to give face validity to the training. Instructors who were called to testify were sometimes unable to justify what training had been given.

POST will continue to examine all aspects of law enforcement driver training needs and provide statewide training standards and guidelines that will ensure California law enforcement has the driver training to meet the needs of society, to ensure officer safety and competence, and to reduce traffic collisions involving emergency vehicles.

Questions about the certified course should be directed to the Training Delivery and Compliance bureau at (916) 227-4862. Questions about the instructor manual should be directed to Training Program Services at (916) 227-4885.

Kenneth J. O'Brien

KENNETH J. O'BRIEN
Executive Director

Acknowledgments

Commission on Peace Officer Standards and Training
Emergency Vehicle Operations Training Advisory Council

SERGEANT PAUL BECOTTE
San Diego Police Department
San Diego Regional Public Safety Training Institute

FORREST R. BILLINGTON
Lieutenant (Retired)
San Bernardino County Sheriff's Department

OFFICER JERRY BUSH
Los Angeles Police Department

DON CROSSWHITE
Driving Training Coordinator
Butte/Glenn Community College

SERGEANT CASEY CRONIN
California Highway Patrol Academy

SERGEANT GEORGE GREIN
Los Angeles County Sheriff's Department

DETECTIVE J. D. HILL
Long Beach Police Academy

OFFICER ROGER HOMER
San Jose Police Department

SERGEANT GARY HOSS
San Mateo County Sheriff's Department

SERGEANT BOYD LONG
San Diego Police Department
San Diego Regional Public Safety Training Institute

SERGEANT DAVID K. LYNCH
San Mateo County Sheriff's Department

ROBERT "BUD" MARKWITH
Coordinator
Contra Costa Criminal Justice Center
Los Medanos College

SERGEANT RON MOEN
Los Angeles Police Academy

OFFICER JIM PETRIE
San Francisco Police Department

SERGEANT MIKE SMITH
Sacramento Police Department

SERGEANT MARC WILKINS
Torrance Police Department

OFFICER MARK ZUKOWSKI
Sacramento Police Department

Table of Contents

Introduction

Manual Introduction

Resource Manual

This manual is one of the primary sources of information for the EVOC Instructor Training Course and a resource for those who develop and present driver-training courses. The manual was developed by the EVOC Instructor Training Advisory Council composed of driver training experts within the State and POST staff.

Course Introduction

1. Purpose and Philosophy

POST staff and the subject matter experts of the advisory committee designed this manual and the EVOC Instructor Training Course to accomplish the following objectives:

- Standardize law enforcement driver training throughout the state.
- Reduce law enforcement-related collisions and the resultant civil liabilities.
- Provide techniques for improving operating efficiency, reducing operation costs and conserving fleet resources.

Course Introduction (continued)

- The judgment and decision-making process is as important as skill development, and proper emphasis on that area is critical.

The EVOC training instructor's philosophy of vehicle operation should ensure that emphasis is placed on smooth application of vehicle control techniques; that all of these control techniques are demonstrated as interrelated; and that proper coordination of these principles will result in maximum vehicle control and safety. The driver training course will be as effective as the agency and instructor allows it to be. Through the developments and understanding of the driver training objectives, the student will better accept the knowledge, skills and behavior promoted during the training.

2. Course Goals

The goals of the EVOC Instructor Training Course are to raise the level of knowledge and abilities of instructors presenting driver training courses and standardize this training throughout the State. Additionally, successful completion of this course will provide expertise and instructor qualification. Student performance objectives required for demonstrating mastery for this EVOC Instructor Training Course are:

- Each student will demonstrate satisfactory proficiency on all required skill exercises.
- Each student will demonstrate the ability to properly instruct driving exercises and complete student performance evaluations.

Peace Officer Standards and Training (POST)

The Commission on Peace Officer Standards and Training was established in 1959. The POST mission includes raising the level of competence of local law enforcement, and improving the administration, management and operation of local enforcement agencies. POST training programs include general law enforcement, specialized law enforcement and reserve categories. The Commission adopts regulations establishing minimum selection standards, such as physical and mental fitness, and training standards for peace officers; certifies training courses for the improvement of peace officer performance; provides management assistance and research services to aid local agencies; and apportions funds (reimbursement) to eligible law enforcement agencies to help defray training costs.

Certificates are presented by POST to law enforcement officers in recognition of achievement of training, education and experience. The purpose of certification is to raise peace officer competence and to foster cooperation among the Commission, agencies, groups, organizations, jurisdictions and individuals. There are six types of certificates awarded by POST to regular peace officers: Basic, Intermediate, Advanced, Supervisory, Management and Executive.

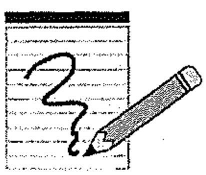
POST training programs are funded by the Peace Officer Training Fund (POTF), a special fund established and maintained by the State Treasury. The only revenue for the fund is derived from a penalty assessment levied on each fine for most traffic and criminal offenses. The POST reimbursement program brings training and trainees together in an ideal arrangement for law enforcement agencies. POST certifies courses for presentation at locations throughout the State and reimburses agencies for combinations of expenses incurred when their employees attend these courses.

Peace Officer Standards and Training (POST) (continued)

All regulations and procedures for certifying an EVOC course are detailed in the POST Administrative Manual (PAM). Course presenters should refer to this document for full details required in certifying such a course. Presenters should consult with their POST Area Consultant prior to making a request to certify a course.

Curriculum

POST provides curriculum standards and performance objectives for meeting the minimum training standards established by the Commission. Curriculum standards and performance objectives for driver training in the Regular Basic Course are listed in Learning Domain #19.



notes

Instructor Outline

40-hour course

Course Goal

Instructor's Note:
The support material for this outline is included in the EVOC Instructor Manual and is referred to in this outline parenthetically when appropriate. This outline is not intended to be an all-inclusive teaching document. The hours indicated for each section are suggested and may be adjusted to meet the needs of the individual program. Examples of hourly distribution schedules are attached that will offer suggestions on scheduling an effective presentation.

The goal of the EVOC Instructor Course is to raise the level of knowledge and abilities of instructors presenting EVOC courses and standardize this training throughout the state. Successful completion of this course will provide expertise and instructor qualification.

Introduction/ Orientation (2 Hours)

Learning Goal

The student will comprehend the purpose, philosophy and overview of the EVOC Instructor Course.

Introduction/ Orientation (continued)

1. Registration and Orientation

- Forms completion
  - Roster(s) and other agency or POST forms
  - Evaluation forms
- Facility rules
  - Safety and communication concerns
  - Facility orientation

2. Instructor Course Purpose

- Standardize EVOC training
- Reduce collisions and liabilities
- Improve vehicle operating efficiency
- Increase awareness of using good judgement and decision making

3. Manual Familiarization

- Emphasize importance of knowing material prior to training
  - Designed to prepare the instructor to present EVOC instruction
  - Reference guide
  - Establish credibility with student
- Review key elements of manual
  - Chapter by chapter summary
  - Review driving exercise diagrams

Introduction/ Orientation (continued)

4. Current EVOC Courses (EVOC Manual - Chapter One)

- Basic Recruit
- Reserve Officer
- In-Service
- Driver Awareness
- Driver Awareness Instructor
- EVOC Instructor
- Driving Simulator
- Legal Intervention
- Executive Protection Driving

Defensive Driving Factors (4 Hours)

Learning Goal

The student will understand the causes and classifications of emergency vehicle accidents, and techniques to avoid collisions.

1. Collision Statistics and Factors (EVOC Manual - Chapter Two)

- Collision Statistics
  - Primary collision factors
  - Statewide statistics
  - Local statistics

Defensive Driving Factors (4 Hours) (continued)

- Contributory Causes
  - Psychological factors
  - Physiological factors
  - Environmental factors
  - Vehicular factors
- Collision Classifications
  - General classifications
  - Agency policy

2. **Vehicle Care and Maintenance (EVOC Manual - Chapter Three)**
   - Vehicle Abuse
   - Vehicle Maintenance
   - Pre-Operational Vehicle Inspection

3. **Defensive Driving Techniques (EVOC Manual - Chapter Four)**
   - Defensive Driving Components
     - Driver
     - Vehicle
     - Environment
   - Defensive Driving Tactics
     - Space cushion
     - Intersections

Defensive Driving Factors (4 Hours) (continued)

- Freeway driving
- Stopping
- Backing
- Lane changes

- Occupant safety devices
  - Seat belts
  - Air bags

4. **Adverse Operating Situations (EVOC Manual - Chapter Five)**
   - Skids
   - Brakes
   - Environmental
   - Other factors

5. **Commentary Driving (EVOC Manual - Chapter Six)**
   - Pre-driving
   - Driving habits
   - Freeway driving
   - Night driving
   - Attitudes

Vehicle Operations Factors (4 Hours)

Learning Goal

The student will understand the concepts of vehicle dynamics, vehicle control techniques, braking and roadway position.

1. **Vehicle Dynamics (EVOC Manual - Chapter Seven)**
   - Methods of vehicle control
     - Steering
     - Braking
     - Throttle
   - Weight Transfer
     - Lateral
     - Longitudinal
2. **Vehicle Control Techniques (EVOC Manual - Chapter Eight)**
   - Steering control
   - Throttle control
   - Speed Judgement
3. **Braking (EVOC Manual - Chapter Nine)**
   - Braking dynamics
   - Left-foot
   - Controlled
   - Threshold

Vehicle Operations Factors (4 Hours) (continued)

- Straight line
- Extended release
- Brake fade
- Anti-lock Brake System (ABS)

4. **Roadway Position (EVOC Manual - Chapter Ten)**
   - Turn classifications
   - Control considerations
   - Speed control
   - Reverse driving
   - Formulas and reference tables

Emergency Driving Factors (3 Hours)

Learning Goal

The student will understand the legal and liability issues as they apply to emergency response driving, pursuit driving and the POST Pursuit Guidelines.

1. **Legal Issues/Liabilities (EVOC Manual - Chapter Eleven)**
   - California codes
     - Vehicle code
     - Penal code
     - Evidence code

Emergency Driving Factors (3 Hours) (continued)

- California case law
    - Summary of case
    - Case law decision
    - Impact on law enforcement
- Book of Approved Jury Instructions (BAJI)
- Federal case law
    - Summary of case
    - Case law decision
    - Impact on law enforcement

2. **Emergency Driving Operations (EVOC Manual - Chapter Twelve)**

- General information
- Passing on the right
- Driving considerations
- Siren audibility
- Driving tactics

3. **Vehicle Pursuit Operations (EVOC Manual - Chapter Thirteen)**

- Pursuit philosophy
- Pursuit Guidelines 13519.8 PC
    - When to initiate a pursuit
    - Number of units involved and their responsibilities

Emergency Driving Factors (3 Hours) (continued)

- Communications
- Supervisory responsibilities
- Driving tactics
- Blocking, ramming, boxing in and roadblock procedures
- Speed considerations
- Air support
- Termination
- Capture of suspects
- Interjurisdictional considerations
- Reporting and post-pursuit analysis

Practical Application Exercises (24 Hours)

Learning Goal

The student will develop the proficiency and explain the techniques required to complete selected driving exercises from each of the categories from this section. The student will also develop the ability to evaluate and remediate students.

1. **Student Driving Skill Development (EVOC Manual - Chapter Fourteen)**

- Lesson plans for individual driving exercises
    - Materials needed
    - Goals and objectives
    - Procedure to drive course
    - Evaluation

Practical Application Exercises (24 Hours) (continued)

- Select exercises from the following categories in the manual that meet your program's needs:
  - Vehicle placement
  - Skid control
  - Collision avoidance
  - Backing
  - Braking
  - Performance driving
  - Emergency response driving (Code-3)
  - Pursuit driving
  - Judgement and decision making
- Exercises may be placed in a continuous loop to make a driving skill course:
  - Parallel parking
  - Turn-around Exercise
  - "T" driveway
  - Offset lane
  - Steering course

2. **Testing/Evaluation Techniques (EVOC Manual - Chapter Fifteen)**

- Written examinations

Practical Application Exercises (24 Hours) (continued)

- POST Test Item Bank
- In-house written test

- Practical exercises
  - Skills
  - Knowledge
  - Attitude
  - Judgement
  - Tactics
  - Vehicle control
- Remediation
  - Improve student performance
  - Objective documentation
- Instructional evaluation consideration
  - Four-step teaching method
  - Driving experiences
  - Remedial solutions
  - Feedback
  - Verbal communication skills
  - Honest objective ratings
  - Written communication skills (evaluations)
  - Discipline, remediation and termination documentation

Practical Application Exercises (24 Hours) (continued)

- Instructor development
  - Design new exercises
  - Setup, demonstration and drive exercise
  - Teach exercise
  - Staff evaluation

Course Management Components (2 Hours)

Learning Goals

The student will understand the process of site selection, safety considerations, obtaining equipment, scheduling training and instructors, planning for contingencies and ensuring proper student to instructor ratios when managing a course.

1. **Course Management (EVOC Manual - Chapter Sixteen)**

- Site selection
  - Site preparation
  - Resources
  - Realistic course configurations
- Equipment and Materials
  - Vehicles
  - Course markers
  - Equipment resources
- Safety and control (POST and Facility Safety Guidelines)

Course Management Components (2 Hours) (continued)

- Scheduling
  - Frequency
  - Record keeping
- Format and hours
- Contingency planning
  - Alternate training sites
  - Alternate instructors
  - Backup vehicles
- Five-to-one student to instructor ratio

2. Instructional Equipment (EVOC Manual - Chapter Seventeen)

- Audio - Visual equipment
- Visual aids
- Driving simulators
- Vehicles
- Communications and electronic equipment
- Safety and control equipment
- Additional equipment for high-speed course

Critique and Course Evaluation

(One Hour)

Hourly Distribution Schedule
40 Hours

Day	Time	Subject
One	2 Hours	Introduction to Vehicle Operations
	2 Hours	Vehicle Operations Factors
	1 Hour	Code-3
	1 Hour	Introduction to Teacher Training
	2 Hours	Vehicle Operations Liability
Two	8 Hours	Vehicle Control Techniques (Behind the Wheel)
Three	4 Hours	Defensive Driving (Behind the Wheel)
	4 Hours	Vehicle Operations Factors (Behind the Wheel)
Four	4 Hours	Stress Exposure & Hazards, Code-3 (Behind the Wheel)
	4 Hours	Pursuit Driving (Behind the Wheel)
Five	4 Hours	Vehicle Control Techniques (Role Playing, Behind the Wheel)
	3 Hours	Code-3 and Pursuit Driving (Role Playing, Behind the Wheel)
	1 Hour	Critique and Course Evaluation

Chapter One

current evoc courses

Each of the following EVOC courses provides specific curriculum related to law enforcement driving courses, and sample copies of each detailed course outline may be obtained from the presenter or the POST Administrative Manual (PAM).

Basic Recruit EVOC Training Course

This 24-hour minimum driver training course is a POST-mandated requirement for all recruit officers. Certified presenters offer this course in a time frame ranging from 24 hours to 40 hours. The content requirements for this course are listed in the POST Basic Course Performance Objectives Section 6.0, "Vehicle Operations" (LD19).

Reserve Officer EVOC Training Course

There are a few certified driver training courses for reserve officers only. These courses are designed to provide the POST-required content for the reserve officer basic training program.

In-Service (or Advanced Officer) EVOC Training Course

There are several certified in-service driver training courses throughout the State ranging from 8 to 40 hours. Most of them parallel the contents of the Basic Recruit EVOC Training Course. These courses are intended to serve either as a periodic refresher driving course for veteran officers or as a remediation for officers with driving problems.

Driver Awareness Course

This eight-hour course was developed and certified by POST to serve as a refresher on driving techniques and responsibilities for veteran officers. It was designed to be taught at sites near local agency facilities. Efforts to involve supervisors in the driver training have proven to be effective in reducing collisions by instructing supervisors to assume more responsibility for their subordinates' driving habits.

This course provided a practical means for giving the 60,000 officers in the State the opportunity to receive the needed refresher training in driving skills and knowledge.

Driver Awareness Instructor Course

The 24-hour Driver Awareness Instructor Course was certified by POST and is intended for local agency presenters who will be conducting Driver Awareness Programs at their local facilities. It is also a prerequisite for instructors who wish to attend the EVOC Instructor Training Course.

Emergency Vehicle Operations Course Instructor Training Course

The 40-hour EVOC Instructor Training Course was developed in 1988. It was developed to upgrade the overall quality of instructors throughout the State, standardize driver instruction and expose new instructors to all of the accepted and effective training techniques.

This course is designed for persons who will be participating as key lead instructors in driver training courses at local agencies or community colleges or developing new courses.

Law Enforcement Driving Simulator Course (LEDS)

A limited number of LEDS training programs are available to law enforcement personnel who engage in emergency driving. Four and eight hour programs are available and intended to enhance behind-the-wheel training. The emphasis in these courses is proper judgment and driving tactics, as well as incident coordination and communication issues.

Legal Intervention

Eight hour course of instruction that includes roadblocks, road spikes, pursuit intervention technique (P.I.T.), and alternative pursuit termination techniques.

Executive Protection Driving

This training is conducted in eight, sixteen and forty hour courses, designed to train personnel in dignitary protection. The courses include aspects of defensive training pertinent to avoiding potential threats.

notes

Chapter Two

emergency vehicle collision statistics

Law enforcement collisions are an unfortunate reality. It is the goal of every EVOC instructor to decrease the total number of emergency vehicle collisions that occur every year. Through analysis, common problems have been identified and EVOC exercises have been developed to provide additional training aimed at collision reduction.

Statistics from California law enforcement agencies have been collected for the period between 1987 and 1996, and the leading factors have been tabulated below. The statistics are based upon primary collision factors of all reported collisions regardless of which driver caused the incident. The categories listed represent approximately two-thirds of all patrol car collisions.

Roughly one-third of all of these collisions were due to unsafe or excessive speed. Another third can be attributed to poor defensive driving practices, such as right of way violations, improper turning movements, unsafe passing, unsafe lane changes, following too close, or failing to stop at a stop sign or signal.

Close to two-thirds of the collisions were property damage only. Slightly less than one-third involved an injury, and six-tenths of one percent were fatal collisions. These numbers are not exclusive to officers, but also include the motorists involved in the collisions.

PATROL CAR INVOLVED COLLISIONS
by Primary Collision Factor
Statewide CHP Jurisdiction

Year	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	Total	% of Total
Speed	463	444	406	401	376	382	380	391	379	363	3,985	31.0
Too Close	23	20	26	19	18	19	18	22	21	17	203	1.6
Improper pass	14	14	11	7	16	15	9	11	14	9	120	1.0
Lane change	88	88	79	81	71	62	75	69	77	60	750	5.8
Improper turn	135	120	155	123	105	119	111	112	98	114	1,192	9.3
ROW auto	97	87	90	87	101	92	116	124	99	118	1,011	7.8
Stop/signal	23	28	21	30	20	25	20	26	29	25	247	1.9
Start/backing	104	113	131	118	102	107	114	98	104	81	1,072	8.3
Total group	947	914	919	866	809	821	843	853	821	787	8,580	66.7
Total in year	1,297	1,323	1,329	1,277	1,242	1,302	1,274	1,330	1,281	1,216	12,871	

Other categories not listed include: Driver alcohol/drugs, impeding traffic, wrong side of road, ped violations, hazard parking, lights, brakes, other equipment, not the driver, improper driving, ped alcohol/drugs, fell asleep, and not stated.

PATROL CAR INVOLVED COLLISIONS
by Type of Injuries
Statewide CHP Jurisdiction

Year	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	Total	% of Total
PDO	891	906	915	829	817	866	879	891	857	795	8,646	67.2
Injury	396	412	410	437	419	426	391	432	415	408	4,146	32.2
Fatal	10	5	4	11	6	10	4	7	9	13	79	0.6
Total	1,297	1,323	1,329	1,277	1,242	1,302	1,274	1,330	1,281	1,216	12,871	

Statistics reflect the number of collisions and not the number of persons involved.

Contributory Causes

1. Haddon Matrix

The time sequence of a crash is divided into three phases -- pre-crash, crash, and post-crash and these interact with three sets of crash factors -- human, vehicle and physical environment in a nine-cell matrix.

Each cell of the matrix provides opportunities for interventions to reduce crash losses.

The pre-crash phase encompasses all that determines whether a crash actually takes place; the crash phase includes all that determines whether injury occurs and its nature and severity. Post-crash phase includes all that determines the extent to which personal injury is limited and repaired after the crash.

2. Psychological Factors

Many psychological factors contribute to law enforcement officers becoming involved in collisions. Some of these are discussed below.

- Attitudes

  Psychological factors (attitudes) are perhaps the most significant contributors to involvement in collisions. An occupational hazard of law enforcement drivers is that they are preoccupied with observations of possible criminal behavior. If law enforcement officers have the "right attitude" while driving, their collisions will be below the rate for the average citizen. Some attitudes include:

Contributory Causes (continued)

Wrong Attitude	Right Attitude
Being preoccupied with idle thoughts or chatter.	Being attentive to possible traffic hazards.
"I'm in a cop car. I don't have to obey the laws."	"I'm a professional. I must drive like one."
"This guy broke the law, and He's not going to get away from me."	"This is getting too dangerous, I'm going to call it off."
"Good driving means going fast and getting there quick."	"Good driving means caution and control."
"I'm in a hurry. I'll take that chance!"	"Only fools take chances."
"A fellow officer may need my help so I'll drive like crazy."	"A fellow officer may need my help, so I better make sure I get there to help."
"I'll catch that jerk by going faster and there is no way he's going to get away from me."	"The way this guy's driving this is becoming unsafe and I may need to terminate the pursuit."
"So the signal is red, I've got my siren and lights on, they will get out of my way!"	"I'll clear this intersection lane by lane because someone may not hear or see me."
"I've been to driving school so I know how to cut those corners fast. Go for it!"	"Brake before turning, drive to the apex, and be ready for the unknown."

Contributory Causes (continued)

EVOC training instructors must instill in their lesson plans, in their lecture material, and in their behind-the-wheel instruction that the "bottom line" to good driving is to use caution and be in control of the vehicle and the situation at all times. In other words, "drive defensively". All instruction must be directed to having the student adopt a proper defensive attitude for driving.

- Emotional Factors

  There are other psychological factors which impact driving, such as peer pressure, depression, anger, anxiety and fear. These are part of the emotional roller-coaster in most law enforcement duties. However, instructors must emphasize that when a person drives a vehicle, these emotions must take a "back seat" to caution and regard for the safety of everyone, including the officers. Psychological factors and their impact on emergency, pursuit and routine driving will be discussed in other portions of this manual.

  Sometimes these emotions can help a person drive more safely. Fear is an example. If driving too fast through an intersection, around a corner, past a school, or on a freeway causes the feeling of fear in the driver or the partner officer, it is a strong indicator that the driver should slow down. Students should be instructed to pay attention to these warning signs.

- Mental Condition

  Because officers are constantly dealing with varying activities, their mental attention also varies. They must be reminded that as soon as they get in the driver's seat, they must force their mental attitude to return to that of a safe, defensive driver.

Contributory Causes (continued)

3. Physiological Factors

Physiological factors may have an impact on the causes of law enforcement collisions. Some common factors are:

- Vision

  Good vision is crucial to safe driving. Nearly every action taken by a driver is keyed by how the driver interprets what is seen. Many factors can adversely affect visual acuity and depth perception, such as tired or weak eyes, old glasses, dirty windshields, dark sunglasses, convex mirrors, reflections, alcohol, medication, fatigue and others. Carbon monoxide produced while smoking cigarettes affects the retina of the eye. This is termed "anoxia" and is most pronounced under poor lighting conditions and at higher altitudes.

  Even though all of the senses are used to some degree while driving, vision accounts for most of the information used to safely control the vehicle. This is true at any speed, but becomes proportionately more critical with increases in speed. Limitations on visibility, such as darkness, fog, rain, smoke, on-coming headlights, etc., will reduce clear vision, and should always be used as clues to reduce speeds.

  Many officers find it desirable to wear sunglasses during daylight hours to prevent eye fatigue. Good quality sunglasses do not damage eyesight. However, proper selection of lenses must be made to ensure that protection is adequate and that the officer's vision is not impaired. The California Highway Patrol recommends a neutral gray lens. Lenses of other colors such as amber, blue, brown, violet, or rose may interfere with normal vision. Sunglasses should never be worn at night, while driving.

Contributory Causes (continued)

Safe driving is enhanced by looking farther ahead into the line of travel, which is called "high visual horizon". This will bring earlier awareness of potential hazards. Looking at the rear bumper of the car ahead can limit the driver's awareness of hazards ahead. Not looking far enough ahead is known as "low visual horizon," which accounts for many collisions.

Eyesight can also play tricks on drivers, especially during stressful situations such as pursuits or emergency responses. The brain responds to this stress by narrowing the field of vision to concentrate on details within direct aim of the eyes. This helps concentrate attention to details straight ahead but reduces peripheral vision. Reduced peripheral vision creates blind spots to either side of the line of sight. Many serious collisions result from the driver's inattention to this reduced peripheral vision. The driver "just didn't see the car (or pedestrian) coming from the side". This natural human response of narrowing the peripheral vision during stressful situations can be overcome by turning the head or eyes from side to side, forcing attention to those areas.

- Fatigue

Physical fatigue is a great detriment to safe driving. The causes of physical fatigue are many, such as not getting enough rest, handling a family crisis, etc. Some symptoms of fatigue are blurred vision, inattention to details, heavy eyelids, lapses of memory, lack of initiative and energy.

Law enforcement officers might be more susceptible to fatigue than those in most other occupations. The varied shifts, long hours, job excitement, job boredom and other factors create a lifestyle which

Contributory Causes (continued)

tends to reduce the amount of quality sleep an officer gets. Lack of sleep is the most common cause of fatigue. Those on night shifts are the most prone to fatigue.

Mental fatigue, such as that created from personal or job-related stressful encounters, causes the same symptoms and hazards as physical fatigue. Both deprive the body of the state of alertness necessary for safe driving.

Since driving occupies a significant portion of an officer's shift, each officer must remain alert. Fatigue deteriorates that alertness. If an officer is fatigued, the officer should either request a non-driving assignment or continually take steps to reduce the fatigue, such as cold water on the face, or periodically getting out of the vehicle for fresh air and stimulating the muscles. This is especially true for night driving while fatigued.

- Stress

The nature of law enforcement frequently subjects an officer to highly stressful situations. These situations usually occur without warning and may be preceded by a period of relative inactivity.

Stress can cause an increase in blood pressure, release of adrenaline into the blood stream, and affect the respiration rate. The nervous system may be affected to the extent that an individual's rational thought process may be impaired. Stress thresholds vary for each individual. A stress threshold can be described as that point where physiological reactions so impair the functioning of the senses that the driver becomes unaware of the surroundings.

Contributory Causes (continued)

In the past, some drivers have been unable to recall any of the circumstances immediately preceding collisions, which occurred during the Code-3 operation of an emergency vehicle.

The physiological symptoms of stress are best dealt with by recognizing their existence and forcing greater attention on safe driving practices.

- Attention Failure

Most people have experienced lapses of attention at one time or another. Unfortunately, the results can sometimes be fatal. As a driver's mind begins to wander, that person may suddenly miss a freeway exit, lose track of a conversation, or control of a car. Operating a vehicle requires both attention and concentration. Tests have disclosed that drivers who have become involved in traffic collisions have shared certain deficiencies, one of them being attention failure.

From a physiological standpoint, people are more apt to suffer lapses of attention as stress is increased. A number of things may have a profound and adverse effect on many people. Alcohol and medication not only decrease reaction time but also adversely affect a person's ability to concentrate on psychomotor tasks. Fatigue and illness have the same effect. Emotional stress significantly affects one's ability to concentrate. Problems at home, worrying about financial matters, anger, nervousness, or concern over dealings with others are examples of the types of things that can cause added stress in our daily lives.

Attention failure may have a profound effect on driving performance, causing otherwise competent drivers to place themselves or others in jeopardy.

Contributory Causes (continued)

- Smoking

  According to one study, people who smoke while driving are 50% more likely to cause automobile collisions than non-smokers. The reasons are that lighting up or searching for an ashtray distracts smokers. In addition, the smoke may fog windshields and cause eye irritation and coughing.

- Chemically Induced Impairments

  Coffee, nicotine, alcohol, legal and illegal drugs, and other chemicals may impair physical reactions, often affecting a driver's attention span and reaction time.

- Factors During and After a Collision

  Physiological factors can impact the severity of injuries during and after a collision. If the seat belt is not being used or properly adjusted, injuries may be more severe, especially if the occupant is ejected from the vehicle during the collision. The physical condition (strength, ailments, disabilities, etc.) of the occupants of a vehicle can also determine the severity of injuries. Also, if items are not secured within a vehicle, they may cause additional injuries.

4. Environmental Factors

Environmental factors contributing to the causes of collisions are many and varied.

- Passengers

  Passengers can be a contributing factor in causing collisions, especially for law enforcement officers. For example, transporting an uncooperative suspect can divert the driver's attention, which can cause a collision. If a collision occurs because of passenger distractions, the responsibility remains with the driver.

Contributory Causes (continued)

- Traffic

  Traffic conditions are almost always contributory causes of collisions. Conditions around heavy pedestrian or vehicular traffic, or near large gatherings of children or teenagers, or streets frequented by young adult drivers often create hazardous situations for drivers. Attention to some of these typical hazardous traffic situations can make the driver more defensive and prepared for evasive actions. EVOC training instructors should be familiar with the various conditions that lead to collisions and instruct law enforcement drivers to always be alert and defensive to potential traffic hazards.

- Weather and road conditions

  These factors will be discussed in depth in Chapter 5 "Adverse Operating Situations".

5. Vehicular Factors

Vehicle mechanical failure is rarely a contributing factor to the cause of collisions. When vehicle failure is a contributing factor, it is often brought on by driver abuse, such as riding the brakes, downshifting at high speeds, or inappropriately driving over obstacles.

The vehicle can be a contributing factor causing collisions due to abuse or mechanical failure of a critical component.

Some typical vehicle problems contributing to the causes of collisions include some of the following:

Contributory Causes (continued)

- Tire Blowout

  Today's tires are very durable. However, under certain circumstances, tires can and do blow out. This is an emergency which cannot necessarily be anticipated because it happens so quickly and without any advance warning. Defensive driving actions will obviously depend upon the circumstances at the moment. The following are some general rules to help drivers maintain control of their vehicles should a blowout occur.

  Expect the car to pull toward the side on which the blowout has occurred. Do not immediately jerk the wheel; rather, attempt to guide the car gradually in the safest direction. DO NOT INSTINCTIVELY BRAKE! Braking will pull the car severely toward the side on which the blowout occurred, particularly if it involves a front tire.

- Stuck Throttle

  On occasion, drivers may experience a stuck throttle. If this happens, the driver must react quickly. Braking will be of limited effectiveness because the push of the engine will quickly overheat the brakes. A hard tap on the accelerator once or twice, quickly lifting the foot each time, may correct this. If this does not release the throttle, the driver should attempt to pull it up with the toe of their shoe. If this fails, or if circumstances do not afford enough time to attempt throttle release, TURN OFF THE IGNITION KEY! Select a lower gear and pull off the road when safe to do so. Remember that the car will lose power steering as vehicle speed decreases. The brakes will lose their power system after the first or second brake application. Expect to use heavy pressure on the brake pedal.

Contributory Causes (continued)

- Hood Inadvertently Released

  Federal regulations require that front opening automobile hoods have a secondary or safety latch. This device is intended to function as a backup should the primary latch unexpectedly release. It is designed to prevent the hood from flying up while the car is in motion. Should both the primary and secondary latches fail and the hood releases at high speed, the results could be serious, especially if wind forces the hood back into the windshield. The upraised hood will block forward vision. Usually, there will be a gap at the bottom of the hood just above the dashboard. If unable to see through this gap, the only choice will be to roll down the window and attempt to look around the hood while slowing and pulling off the roadway. Avoid a panic stop, which may increase risks.

- Engine Failure

  Law enforcement vehicles are generally equipped with large engines, heavy-duty suspension, transmissions and brakes, plus additional emergency equipment. The power brake and power steering systems are dependent upon engine operation to function properly. If the car is in motion when the engine fails, power steering will continue to function down to a relatively low speed if the transmission is left in gear. Vehicles with overdrive transmissions will lose power steering, as a result of an engine failure, in as little as two seconds. Shifting to a lower gear within two seconds of engine failure will maintain power steering until about 25 miles per hour.

  The power brake system is actuated by the engine vacuum. When the engine fails, the vacuum is no longer produced. If the brake system is functioning properly, a limited amount of vacuum may be stored within the system. Should the engine fail, this

Contributory Causes (continued)

reserve vacuum will ordinarily allow for two power-assisted brake applications to bring the car to a safe stop. As long as the vehicle is in gear and the engine is turning over, the power-assisted brakes will continue to operate.

Collision Classifications

1. General Classifications

Although agencies may use different terminology to describe these general classifications, they imply the same categorical meanings. The three general types are listed below.

- Preventable:

  A preventable collision is one in which the driver was responsible, did not use proper defensive driving techniques, and/or did not follow department policy.

- Non-Preventable:

  A non-preventable collision is one in which the driver was not at fault and could not have reasonably prevented it.

- Work Damage:

  Incidents classified as "Work Damage," "Operational Damage," or other similar wording generally include those factors related to vehicle or roadway surface conditions as the primary causes of the collisions. These may include factors such as a tire blowout, which results in loss of vehicle control or damage to the underside of a vehicle from objects on the ground. Some agencies use this category for collisions, which occur during driver training activities.

Collision Classifications (continued)

2. Agency Policy

Statistical reporting of collisions and their categorization may be different in each agency. Some agencies do not categorize their collisions at all, but merely indicate the primary cause. Students should be referred to their agency policies and guidelines concerning collision reporting and classifications.

notes

Chapter Three

vehicle care and maintenance

Vehicle Abuse

Law enforcement vehicles are expected to remain in service for approximately 2-3 years. With proper care and maintenance the vehicle can be expected to meet the demands placed on it during the course of each shift. Unfortunately, abuse of patrol vehicles by officers causes undue wear and the subsequent breakdown of many vehicles. Such things as unnecessarily overworking the brakes, downshifting at high speeds, causing the tires to break traction when accelerating, and driving over speed bumps, curbs or railroad tracks at inappropriate speeds will tend to contribute to mechanical failure.

The law enforcement driver must help maintain the patrol vehicle's performance capabilities. Repairing vehicles and taking them out of service for frequent or extended periods of time results in losses, both in terms of money and time. An officer's life may one day depend on its performance capabilities.

Vehicle Selection Process

Prior to being accepted for use in law enforcement, vehicles undergo a series of tests designed to determine their capabilities as to acceleration, speed, maneuverability, braking, safety features, ease of maintenance, ergonomics, fuel consumption, and equipment installation access. Once the vehicle has been placed in service, it is up to the individual officer to assist in keeping it in a condition similar to which it was received.

Vehicle Maintenance

Mechanics are available to ensure that patrol units are repaired, tuned, and lubricated. The officer who drives the unit is in the best position to provide information that can assist the mechanic in properly maintaining the fleet of vehicles. This may include reporting anything from unusual engine noise and vibration to checking air pressure in the tires. Unfortunately, some officers fail to report these things, or ignore them completely. This practice leads to increased vehicle maintenance costs, and more importantly, it ultimately jeopardizes the safety of personnel using the vehicle.

Pre-Operational Vehicle Inspection

The driving officer should be responsible for inspecting the law enforcement vehicle before placing it into service. This will ensure that the vehicle is in a safe operating condition. The inspection need not be a time-consuming project. Officers should develop a system that allows for a thorough check of the law enforcement vehicle.

- It is the responsibility of each officer to ensure that the vehicle is in a safe operating condition at the beginning and conclusion of each shift. Any irregularities in vehicle performance should be reported immediately in writing, and if necessary, the vehicle removed from service. A pre-operational check should include, but not be limited to the following:
- General Vehicle Appearance
  - A visual inspection of the vehicle can reveal broken springs, torsion bars, sway bars, or even insufficient tire pressure.
  - If the car appears to lean toward one side, "bouncing" the fender might indicate that something in the suspension system is broken or unsafe.

Pre-Operational Vehicle Inspection (continued)

- Tires
  - From a safety standpoint, tires are one of the most important parts of the vehicle and the easiest for officers to check. While smooth tires can provide a small amount of additional traction on dry pavement, the opposite is true on a wet or gravel surface. Good tire tread enhances puncture resistance and is vital for law enforcement driving. A new tire has less traction potential until broken in.
  - Always check for sidewall cuts. Radial tires have a thin sidewall for flexibility. If the sidewall is cut, a blowout may result causing loss of vehicle control.
  - A properly inflated radial tire gives the appearance of being under inflated because of the bulging sidewall. Underinflation of radial tires is a significant problem. Since it is difficult to judge tire pressure by visual inspection, a tire pressure gauge should be used.
  - It is recommended that the "cold" tire pressure in all manufacturers' standard vehicle tires be maintained according to specifications. When a vehicle is driven, the temperature of the tire increases due to the rolling friction created between the tire and the road surface.
  - A rise in tire temperature will result in an increase of pressure in the tire.
  - A tire that is below the recommended inflation pressure may sustain belt separation, which could result in a blowout. Improperly inflated tires will also cause premature tread wear and poor steering response. Additionally, in a high-speed turn an under inflated tire may roll off the rim.

Pre-Operational Vehicle Inspection (continued)

- Ensuring proper tire pressure will increase the tread life of the tire. More importantly, proper tire pressure will usually help ensure maximum vehicle maneuverability.

- Wheels

  Inspect each wheel for hairline cracks or other damage, which may indicate potential wheel failure. When in doubt, replace the wheel.

- Lights

  Walk around the car or have another officer assist while checking high and low beams, turn signals, stop lamps, emergency lights and spotlights.

- Trunk

  - Always inspect the contents of the trunk. The spare tire should be in good condition and properly inflated. Other items in the trunk should include, but not be limited to, the fire extinguisher, bumper jack, lug wrench, flares, hazardous materials guidebook, blanket and first-aid kit. Secure all gear within the trunk. Unsecured objects can damage radio and other equipment during quick turning maneuvers.

  - Identify the emergency fuel shutoff switch and keep it accessible.

Instructor's Note:
Always ensure that the fire extinguisher is properly charged by checking the pressure gauge.

- Body Damage

  - Immediately report any vehicle damage.

Pre-Operational Vehicle Inspection (continued)

- Entering the Vehicle

  - Check for dirt and trash on the floor. At high speeds, if any of the windows are rolled down, debris inside the vehicle could blow into the face and eyes.

    Prior to starting the engine, check all warning lights, including ABS and air bags, if applicable.

  - Adjust the seat and mirrors. Start the engine and while it is idling, check the oil pressure, charging system and fuel level. Check the instrument panel, interior lights, horn, siren and radio. Check brake pedal height by applying pressure to the brake pedal. Pedal travel varies with each model of vehicle. As a general rule, if the pedal feels "spongy," the vehicle should be taken out of service and the brake system inspected by a mechanic. Check the parking brake to ensure that it works.

  - Check for excessive play in the steering wheel. Excessive play in the steering wheel should be considered unsafe, and the steering unit should be inspected by a mechanic. Listen for unusual sounds in the power steering system while turning the wheel.

  - Examine the windshield and windows for cleanliness. A film on the windows can cause eyestrain and reduced visibility, especially at night. Inspect wipers for damage and proper operation.

  - Place citation books, notebooks, clipboards, and other personal items where they will not interfere with driving. Collisions can occur when loose articles slide across the dashboard and/or become lodged between the steering wheel and the dashboard.

Pre-Operational Vehicle Inspection (continued)

- Make sure all safety belts in the car are accessible. It is frustrating and dangerous to wrestle a combative arrestee into the vehicle only to find that the safety belts needed to restrain the suspect have slipped under the seat.

- Always remember to sit up straight when adjusting and fastening the seat belt. The lap belt should ride below the bony ridge of the hip bone. If the belt is worn too high, an abrupt stop may squeeze the abdomen against the spine. Be sure the seat belt is not twisted. This could bind the retractor mechanism and interfere with proper release of the seat belt.

- Leaving the Station

  - Listen for unusual sounds in the car. A worn out disc brake pad can make a metallic scraping sound as the wheel turns. A rhythmic clicking sound can signal loose lug nuts or a cracked wheel. Select a safe area at the first opportunity and gently weave the car smoothly back and forth a few times at 25-30 miles per hour. The lateral weight transfer may allow a worn out wheel bearing or noise from broken suspension components to be heard. Check the steering for excessive play, vehicle wandering, or pulling to one side. Make a threshold stop from 30 miles per hour to check brake effectiveness, thus ensuring that the brakes do not pull excessively to one side. Remember that cold brakes may operate differently than after they are warmed up.

  - The pre-operational check can be accomplished in a short period of time. Establishing a set pattern is beneficial to ensure that all critical items are properly inspected at the beginning of each shift.

Pre-Operational Vehicle Inspection (continued)

- Awareness of the mechanical condition of the vehicle should not end with the pre-operational check. Do not ignore sounds that appear strange or unusual. A bumping sound or vibration in the steering system could indicate that a tire or wheel bearing is about to fail. A shimmy or vibration could indicate a loose wheel or drive shaft. A strange odor might also warn of developing problems. For example, antifreeze burning on a hot manifold creates its own unique odor.
- Taking the time to properly inspect the vehicle could ultimately save a life!

notes

Chapter Four

defensive driving techniques

Defensive Driving: Operating a vehicle in such a manner as to be able to avoid involvement in a collision, no matter what the conditions.

Defensive Driving Factors: Instructors must understand basic defensive driving factors and include these techniques into appropriate lesson plans and have the students demonstrate proper defensive driving techniques in all phases of the training course.

Safe driving habits can reduce risk and stress during vehicle operations. Good driving habits provide a foundation for sensible decision-making when a driver is faced with a suddenly changing traffic situation.

Defensive Driving Components

1. The Law Enforcement Driver

The three components of driving are the driver, the vehicle, and the environment/roadway. When analyzing a collision, a deficiency in one or more of these three factors will be found as the cause. The one component that is truly flexible is the driver. The driver alone can adjust to the vehicle's limitations and allow for the variables encountered on the roadway.

Defensive Driving Components (continued)

2. Driving Skills

- Every officer should continually strive to improve their basic driving knowledge and skills. This includes practicing the proper driving techniques, becoming familiar with departmental policies and appropriate Vehicle Code sections relating to the operation of emergency vehicles, and developing an understanding of the vehicle's capabilities and limitations. By continuing to develop proper driving skills, officers reduce the risk of becoming involved in traffic collisions. Students must be instructed that no matter what the circumstances, officers must always drive with due regard for the safety of other individuals using the highway.

- Some people incorrectly assume that more experienced drivers are better drivers. Over a period of time some officers develop poor driving habits. Speeding, failing to completely stop at stop signs, constantly accelerating through yellow lights, making unsafe turns or lane changes, impatience and discourtesy toward others using the highway are but a few characteristics that may increase the possibility of becoming involved in a traffic collision. Experience alone will not make a better driver. Practicing good driving techniques, exercising common courtesy toward others using the highway and adhering to the "rules of the road" will make a better driver.

- Motor Skills: Each driver must understand the constant need to coordinate steering, braking pressure, eye-hand coordination, timing of turns and throttle pressure, or any other physical activity associated with maneuvering a law enforcement vehicle.

Defensive Driving Components (continued)

- Forces that act on a vehicle: Drivers must understand the practical application of laws of physics covering bodies in motion and at rest (momentum and inertia), the use of changes in states of energy from kinetic to heat through friction (braking and turning) and centrifugal/centripetal forces in turning and steering.

3. Psychological Factors

Following are a number of factors which may significantly influence an individual's thinking and subsequent actions as they relate to the operation of an emergency vehicle:

- **Overconfidence**

  Some drivers take too much for granted. They may narrowly avoid collisions and assume it is because of their superior driving ability. These types of individuals generally fail to realize that it could have been their own inattention or poor judgment that initially placed them in jeopardy. They tend to believe that only others may become involved in traffic collisions.

- **Preoccupation**

  That factor which relates to the driver's mind being elsewhere other than the actual driving. This has been targeted into a causal factor of numerous collisions.

- **Self-Righteousness**

  That sure and certain belief that one is always right! This attitude only reinforces feelings of overconfidence.

Defensive Driving Components (continued)

- **Ego**

  Some officers take pride in the fact that they have never lost a pursuit, or that they are always the first ones on the scene. Some individuals may develop the idea that terminating a pursuit or "losing a suspect," is a form of failure, compromising their effectiveness in the eyes of their peers. Consequently, some individuals believe they have something to prove in order to be accepted by their peers. When driving under Code-3 conditions, some officers may disregard caution and common sense. By doing this they not only jeopardize their own lives, but the lives of others on the highway. A professional law enforcement driver will not allow ego to override common sense and training.

- **Impatience**

  This is characterized by taking chances, getting into tight situations, taking shortcuts, making last-minute decisions, braking hard at every stop; all this in an attempt to save a little time.

4. Physiological Factors

- **Preoccupation**

  It is said one sees with the eyes; but that is not true. The eye is merely a complex light-gathering organ. The brain does the actual seeing. If it is busy looking at the passing scenery, it must take additional time to "shift gears" from one subject to another: driving. This time is added to reaction time and increases the possibility of a collision.

Defensive Driving Components (continued)

- **Fatigue (mental/physical)**

  Both seriously affect the ability to control a vehicle in both routine and emergency situations. Fatigue reduces visual efficiency and causes longer reaction times. Proper rest and proper exercise are essential. A well maintained body needs less rest than one that is constantly over-taxed due to poor physical condition.

- **Alcohol/Drugs**

  Both are physiological factors that directly affect a person's mental ability at both the psychomotor skill and reasoning levels.

- **Stress**

  The nature of law enforcement frequently subjects an officer to highly stressful situations. These situations usually occur without warning and may be preceded by a period of relative inactivity.

  Stress causes an increase in blood pressure, pulse rate, release of adrenaline into the blood stream, and change in breathing rate; all of which can lead to tunnel vision. The nervous system may be affected to the extent that an individual's rational thought process may be impaired. The increased physiological activity occurring within the body can cause a slowdown in the thought processes. Stress thresholds vary for each individual. A stress threshold can be described as that point where physiological reactions so impair the functioning of the senses that the driver becomes unaware of the immediate surroundings. Some drivers are unable to recall any of the circumstances immediately preceding collisions which occurred during Code-3 operations.

Defensive Driving Components (continued)

- **Inattention**

  Most people have experienced lapses of attention at one time or another. Unfortunately, the results can sometimes be fatal. As a driver's mind begins to wander, that person may suddenly miss a freeway exit, lose track of a conversation, or control of a car. Operating an automobile requires both attention and concentration. Tests have disclosed that drivers who have become involved in traffic collisions have shared certain deficiencies, one of them being attention failure.

  From a physiological standpoint, people are more apt to suffer lapses of attention as stress is increased. A number of things may have a profound and adverse affect on many people. Alcohol and medication not only increase reaction time, but also adversely affect a person's ability to concentrate. Fatigue and illness have the same effect. Emotional stress significantly affects one's ability to concentrate. Problems at home, worry about financial matters, anger, nervousness, or concern over dealings with others are examples of the types of things that can cause added stress to the daily lives of many.

  Inattention may have a profound affect on driving performance, causing an otherwise competent driver to place self or other users of the highway in jeopardy. A leading cause of law enforcement collisions has been caused by inattention.

- **Smoking**

  Reduces night vision and increases nervousness, and also reduces psychomotor skills. Smoking is a distraction while driving.

Defensive Driving Components (continued)

5. Vision

- Good vision is a prerequisite to safe driving. Law enforcement drivers should regularly have their eyesight checked, particularly as they get older. Many factors can adversely affect visual acuity and depth perception, even in persons with 20-20 vision. Alcohol and drugs, including cold tablets, have a marked effect on visual acuity. Carbon monoxide produced while smoking cigarettes affects the retina of the eye. This is termed "anoxia" and is most pronounced under poor lighting conditions or at night, and it is substantially increased at higher altitudes.

- Many officers find it desirable or necessary to wear sunglasses during daylight hours to prevent eye fatigue. Good quality sunglasses do not damage eyesight, but proper selection of lenses must be made to ensure that protection is adequate and that the officer's vision is not adversely affected. The California Highway Patrol recommends a neutral gray lens. Lenses of other colors such as amber, blue, brown, violet, or rose may interfere with normal vision. Sunglasses should never be worn at night.

6. Driver Attitude

- There are many characteristics of poor driver attitude. The fortunate thing is that attitudes are not inborn or inherited, rather they evolve and become reinforced through repetition, which means they can be corrected.

- Poor driver attitude contributes to more collisions than does lack of skill. Statistics of young drivers indicate that young male drivers around the 20-year age group are reasonably skilled in the psychomotor

Defensive Driving Components (continued)

aspects of driving a car; however, they comprise on a per capita basis, the most accident-prone group of drivers. It is, therefore, not how much skill has been developed through training, experience or practice -- it is the extent to which that skill is applied to the driving task. **Driver attitude is the controlling factor in applying skill.**

- Attitude is a state of mind or mood; or a person's manner of acting, feeling, or thinking that shows a particular disposition.

- The judgment and decision-making process is directly affected by your driving attitude. Webster defines judgment, in part, as the act or process of the mind in comparing -- to ascertain fact; the process of examining fact to ascertain propriety or truth; good sense. As related to driving, judgment could be simply defined as an individual's ability to perceive hazards or dangers. The quality known as **good judgment** is demonstrated by the person who perceives driving hazards far enough in advance to avoid a collision.

7. Driving Conditions

- The law enforcement driver has little control over this area unless one can stop it from raining, make snow melt or stop traffic. Adverse driving conditions demand the absolute in motor skills, experience, mental ability and vehicle performance. When an officer is placed in an adverse driving situation, the body's natural defenses will heighten its abilities in some areas by releasing additional adrenaline into the circulatory system.

- An officer is more likely to have a collision when on routine patrol. One can become hypnotized by the boredom of long stretches of driving, or working early morning shifts.

Defensive Driving Components (continued)

- A defensive driver will drive at a speed that is reasonable and proper for existing conditions. It is not enough to obey all traffic regulations and to drive courteously and carefully. The law enforcement driver must also avoid other driver's errors. The law enforcement driver has to drive with a perspective of expecting the worst from every driver and pedestrian in the driving area. The smoother one makes driving movements, the better that person will be able to control the vehicle.

- The law enforcement driver must:
  - Learn to drive ahead, on both sides and behind the vehicle.
  - Anticipate, but don't accept as inevitable, the actions of other drivers.
  - Always have an escape route to avoid a collision.
  - Maintain proper following distance.

- Common causes of law enforcement collisions are:
  - Inattention
  - Unsafe speed for conditions
  - Right of way violations
  - Unsafe backing
  - Unsafe turns
  - Following too close

Defensive Driving Components (continued)

- Officers should be instructed to:
  - If possible, try to park in a space one can drive forward from. This removes the hazard of backing and has some officer survival advantages.
  - When parking on a slope, turn the vehicle wheels to block the car's movement downhill.
  - In left turns, do not turn the vehicle wheels until actually making the turn. This will prevent the vehicle being pushed into on-coming traffic should it be rear-ended while waiting.
  - When attempting a left turn, do not take for granted that on-coming drivers who signal for turns will actually make them. Or, vehicles turning right will remain in the right-hand lane as they complete their turns.
  - Be aware that pedestrians often dash across the street, unaware of approaching or turning vehicles.
- While one can readily recognize the hazardous potential of high-speed driving, it should also be understood that many collisions occur at relatively slow speeds.

8. Vehicle Capability and Condition

- The purchase of a law enforcement vehicle is usually determined by a process of competitive bids.
- The area where the driver is most in control is in the mechanical condition of the vehicle. Proper mechanical maintenance is a prime responsibility of the law enforcement driver. Support personnel have

Defensive Driving Components (continued)

a responsibility to maintain the vehicle, but without critical awareness and notifications from the driver their efforts will not be enough. If a mechanical malfunction or worn component (brakes, tires, fan belts) is detected, it must be fixed.

9. The Defensive Driver

A DEFENSIVE DRIVER IS ONE WHO DRIVES IN A MANNER TO AVOID COLLISIONS, AVOIDS MISTAKES MADE BY OTHER DRIVERS AND DRIVES CAREFULLY UNDER ALL CONDITIONS.

Defensive Driving Tactics

1. Space Cushion

- The term "space cushion" refers to the clear area or maneuvering room that should be maintained around the vehicle. To maintain a space cushion is to have an escape route to take evasive action. When driving in traffic, it is often difficult to have adequate room to the front, rear and sides. The point is, when one cannot maintain a space cushion in one direction; the driver should be aware of it and leave an escape route in another direction.

- There is a fallacy in the safe following distance "rule of thumb" of one car length for every 10 mph from the vehicle ahead. This fallacy is in the failure to allow for decision and reaction time as follows:

  - The vehicles are traveling at 60 mph with the rear vehicle following six car lengths (108') to the rear of the lead vehicle. The lead vehicle starts a four-wheel locked skid.

  - The first indications of an emergency to the driver of the rear vehicle, are the brake lights and skidding of the lead vehicle.

Defensive Driving Tactics (continued)

- At this point the lead vehicle has already completed decision time and reaction time and has traveled the distances involved.

- Using the average perception time and reaction/decision time of 1-1/2 seconds, the second vehicle will travel 135', 27' past the point at which the lead vehicle started sliding, before the brakes are applied. This will leave the second vehicle 27' short of making a safe stop.

- The space cushion to the front is the area in which the driver has the most control. A rule which can be applied uniformly by all drivers is the minimum three-second rule. The three-second gap will provide time to react if the car ahead suddenly brakes. When traveling at higher speeds or under adverse conditions, a longer time span will provide a safer space cushion.

- The space cushion to the front should not be forgotten when stopping in traffic. This will leave sufficient space in which to turn right or left. This can be particularly advantageous to a law enforcement officer observing a violation or receiving a radio call as it leaves room to pull out of a line of traffic and respond.

  Suspects have been known to intentionally brake suddenly, back into, or ram the front end of a law enforcement vehicle in an attempt to cause the airbag to deploy and disorient the driver, or in order to disable a vehicle by activating the fuel cutoff switch.

  Employing the space cushion concept to the right and left involves many variables. On a narrow, two-lane highway, there is little one can do about that deep drainage ditch to the right, other than to be aware of it as a not-so-desirable escape route. Taking to the ditch might become a good choice, however, if faced

Defensive Driving Tactics (continued)

with an imminent head-on collision. On multi-laned roadways, the choice of lanes can play a great part in collision avoidance. On freeways there is usually more traffic and, hence, more conflict from entering and exiting vehicles in the right-hand lanes than there is to the left.

2. Intersections

- Intersections pose the greatest potential for collisions.
- Most busy intersections have some type of traffic control, either signal lights or stop signs. Law enforcement drivers must establish and maintain a habit of visually clearing intersections of cross-traffic before entering. Normally, one should scan from left to right and then to the left again. Look to the left first because traffic coming from that direction is the first hazard as one enters the intersection.
- After stopping for a red light and the light turns green, you should wait at least two seconds before entering the intersection. This will allow red-light runners, as well as those lawfully in the intersection to clear.
- If a larger vehicle obscures the view of the green light as you're waiting, allow the other driver to start moving before proceeding yourself. This creates some protection even if the other vehicle gets hit by a car running the red light.
- During any Code-3 operation, while entering against any red light or stop sign, consideration should be given to stopping and proceeding cautiously, clearing the intersection lane by lane. A driver should never enter an intersection against controls faster than is safe for the conditions.

Defensive Driving Tactics (continued)

- When approaching a green traffic signal, give some thought to the duration of the green phase. A "stale" green light can change, forcing one to stop abruptly. Check the rearview mirror for traffic behind.

- When stopping in an intersection to execute a left turn, signal and make sure other traffic is aware of your intentions. Don't turn the vehicle wheels to the left, as a rear-end collision may push the vehicle into opposing traffic. When opposing traffic appears to be yielding to the desired left turning movement, look for eye contact from the drivers or pedestrians involved.

- Right turns at intersections can also result in a traffic collision. Under California law, a driver may make a right turn against a red light, after stopping, if it is safe to do so and there are no prohibitive signs. Look to the right before proceeding.

3. Freeway Driving

- Freeway driving requires different skills and poses different hazards than those encountered on surface streets.

- When merging onto a high-speed freeway attempt to match the vehicle's speed to the speed of traffic in the lane being entered. If possible, leave space between the law enforcement vehicle and traffic ahead on the on ramp which will provide room to stop if a driver hesitates to enter traffic at the last moment. When re-entering traffic after an enforcement contact or disabled vehicle stop, utilize the shoulder as an acceleration lane to gain speed before merging to the left.

- When leaving a freeway, reduce vehicle speed in the deceleration lane that is usually provided at the start of each off-ramp. Pay attention to ramp speed advisory signs.

Defensive Driving Tactics (continued)

- When driving for a period of time at relatively high speeds, a driver can lose the sensation of the actual velocity (speed) of the vehicle. One probably won't even be aware of it until leaving the freeway and beginning to slow on the off-ramp. Suddenly, there is recognition that the curve or stop sign at the end of the ramp is coming up much faster than anticipated. If the vehicle is going in a straight line, hard braking, short of locking the wheels, might be in order. If about to enter a curve, remember that a car steers only by rolling friction, and locking the wheels will only cause the vehicle to skid straight ahead. Keep in mind that freeway off-ramps frequently have deposits of oil, debris and radiator coolant on the roadway.

- When driving on a freeway or divided highway at night, consider wrong-way drivers, most of whom are either intoxicated or confused. In either case, they will usually be found in the left lane which they perceive as their right lane. The only real defense against the wrong-way driver is to watch well ahead. When a person's vision is reduced, the odds are better driving in the right hand lane.

4. Stopping

The location, manner and position in which to stop a law enforcement vehicle can be of importance in avoiding a collision; however, the location will not always be a matter of choice. Whenever possible, choose a spot <u>off the roadway</u>. The most dangerous place to stop a car is, of course, in a traffic lane. While such stops are often made during stress situations and emergency circumstances, avoid them whenever possible. The shoulder of the roadway is preferred, although hazards still exist there. When parking on the shoulder, try to find a wide spot that will get the vehicle as far off the roadway as possible. Select a location that allows traffic in both directions maximum visibility of the patrol car.

Defensive Driving Tactics (continued)

5. Backing

- Backing on the roadway is a very hazardous practice; however, there are times when it becomes necessary. Use the shoulder of the road if at all possible, and try to avoid erratic movements which would confuse drivers approaching from the rear. Back slowly and smoothly, stopping as necessary to let traffic clear. Be aware of signs, paddle markers, ditches, or abutments as they may be in the line of travel but below the line of sight.

- Backing out of carports, driveways, or parking spaces can be hazardous. Officers may often be leaving such areas under stressful conditions. Consider the practice of doing the necessary backing when arriving at these locations rather than when ready to leave. Be aware when backing into parking places that the rear overhang of the vehicle is considerably longer than the front; the curb or parking bumper might not stop the wheels before the vehicle contacts an obstacle.

- While backing, the officer should continue to look backward until the vehicle comes to a complete stop. Consideration should be given to front-end swing and other hazards.

6. Lane Changes

- Two factors which contribute to many lane change collisions are the driver's failure to signal and a failure to check blind spots. The rearview and sideview mirrors don't allow the driver to see everything behind the vehicle. The only safe way to be sure that the area to the rear is clear is to turn the head and look over the shoulder.

Occupant Safety Devices

1. Safety Belts

Utilizing safety belts generally reduces the injury caused by the force of a collision. Safety belts reduce the force of impact.

- The use of safety belts minimizes the harm of the second or human collision. By taking the forces of the impact quickly, the belts dissipate those forces through a relatively safe medium (belt itself) instead of through a dangerous medium (glass or steel).
- Safety belt usage helps vehicle occupants in six different ways:
  - There is the "ride down" benefit, in which the belt begins to stop the wearer as the car is stopping.
  - The belt keeps the head and face of the wearer from striking objects like the steering wheel, windshield, dashboard, or other law enforcement equipment.
  - The belt spreads the stopping force widely across the strong parts of the body.
  - Belts prevent vehicle occupants from colliding with each other.
  - Belts prevent vehicle occupants from being ejected from the vehicle during a crash.
  - Belts help the driver maintain vehicle control, thus decreasing the possibility of an additional collision.

Occupant Safety Devices (continued)

- Belts should:
  - Be worn across the hips and pelvic area, not across the stomach.
  - Be adjusted to be snug across the body to prevent internal injury and provide safety and comfort.

2. Benefits of Wearing Safety Belts

- Safety belts have been proven to be the single most effective way of protecting people from serious injuries or death.
- Continuous POST studies regarding on-duty traffic collisions reveal that safety belts are effective in reducing serious injuries and fatalities.
- If one is driving without belts, a sudden swerve or a fast turn might cause that person to slide across the seat and lose control. This is especially true during a response to an emergency call or during a pursuit. Remember once this type of activity is undertaken, it is difficult to put the safety belt on.

3. Compliance

- Law enforcement officers should have a pre-driving routine that includes fastening the safety belt.
- For officer safety, the safety belt should be disengaged and retracted just prior to stopping the vehicle at a location which may involve law enforcement activity.
- California law exempts officers from wearing safety belts unless required by their department policy.

Law enforcement officers who fail to use safety belts, and are injured in a collision, may be subject to a reduction in workers' compensation benefits, especially if they ignore a department regulation requiring their use.

Occupant Safety Devices (continued)

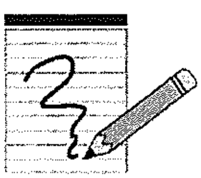
4. Supplemental Restraint Systems (Air Bags)

- Protects driver/passenger by absorbing a significantly greater amount of the crash forces than the driver could withstand.
- Acts as a pillow when activated in a front-end collision.
- Air bags are not designed to:
  - Protect you against a secondary collision because they deflate;
  - Stop ejection from vehicle;
  - Open at side impacts (unless equipped with side air bags), rear-end impacts, slow speeds, bumps, dips, or minor collisions.
- Air bags are designed to supplement and not replace safety belts.
- Air bag information:
  - Air bags inflate at a rate of up to 200 mph. They will begin to deflate as soon as they are fully deployed, and you may still control the vehicle.
  - The powder the air bags are packed with will fill the car with a fine dust. This will dissipate quickly and is not harmful. Although it should be washed off soon.
  - Driver should be at least 12 inches from the airbag. The US Department of Transportation states that persons of small stature should not be seated behind an airbag. A 9-3 hand position on the steering wheel and shuffle steering will help protect you if the bag deploys. Your hands may

Occupant Safety Devices (continued)

hit you in the face if they are in front of the bag when it deploys. Driving with your "thumbs up" on the wheel helps prevent their injury upon bag deployment.

- Your hands may be forced off the wheel upon bag deployment, causing momentary loss of steering control.
- Air bags are designed to deploy at 12-14 mph on a fixed object or at 28 mph on a moving object. A 35-degree or less frontal impact is necessary to cause deployment.
- Some vehicles are equipped with side impact airbags.



notes

Chapter Five

adverse operating situations

Vehicle operating situations may vary considerably depending on the time of year, geographical area, weather conditions, or other circumstances. This area will deal with a number of factors affecting driving conditions.

Skids

An automobile is supported on a cushion of air that exists within the tires. Control of the vehicle is transmitted through tire "footprints". Each "footprint" is about the size of a person's hand. Changes of direction or speed are made by changing the direction of these "footprints". The cohesive quality between the rubber and the roadway is called the coefficient of friction. This coefficient of friction will vary depending upon the roadway surface, or foreign substances on the roadway such as sand, oil, water or ice. Basically, when one or more of the tires exceeds the coefficient of friction, a loss of adhesion to the roadway and subsequent skidding occurs.

1. Acceleration Skids

Acceleration skids involve only the drive wheels. To maintain control of the vehicle, wheel slippage may be reduced or stopped by easing up on the throttle, which will reduce torque to the drive wheels. Accelerating to the point of breaking wheel traction serves no useful purpose, placing tremendous strain on drive train components, wearing out tires and resulting in a slower start than is obtained with controlled acceleration.

Skids (continued)

2. Locked-Wheel Skids

Locked-wheel skids sacrifice all directional control of the vehicle and should be avoided. The front wheels steer only by rolling friction. With the brakes locked, all efforts to steer the car are futile.

3. Four-Wheel Drift

The term "four-wheel drift" is often misunderstood. For instructional purposes, four-wheel drift describes that condition when a cornering vehicle is above the limits of adhesion and in a balanced understeer/oversteer attitude. The vehicle is pointed in the direction it is traveling and all wheels are following a line of the curve, however, the vehicle is evenly drifting toward the outside of the curve. If there is adequate roadway available, the vehicle may negotiate the turn without event.

4. Oversteer (rear-wheel skid)

- Results from over acceleration; excessive steering; improper brake usage; or from road conditions that provide little traction (e.g., wet, bumpy, or covered with debris).
- Countersteer using a rapid and smooth steering input in the direction of the skid. This allows the front end to stay ahead of the back end until recovery is complete.
- If a rear-wheel skid (oversteer) occurs in a front-wheel drive vehicle, it may be necessary to apply appropriate throttle, in addition to countersteering, to "pull out" of the skid and recover vehicle control.
- You must smoothly take out the steering you have put in as the vehicle is recovering. Failure to do so may cause a second skid (caused by lateral weight transfer).

Skids (continued)

- Acceleration and brake use should be avoided. Front-wheel drive can be an exception to this as acceleration can assist in recovery.

5. Understeer (front-wheel skid)

- Results from approaching the turn at an excessive speed; excessive steering; improper brake usage; or from road conditions that provide little traction (e.g., wet, bumpy, or covered with debris).
- Avoid additional steering input, and when the vehicle slows enough to regain rolling friction, the understeer condition will diminish.
- Acceleration and brake use should be avoided.

6. Hydroplaning

- "Hydroplaning" is the term used when a vehicle is skimming along the surface of a wet road. When a vehicle is hydroplaning, the normal contact patch of the tire tread and the road begins to separate. Hydroplaning is a serious condition because the driver cannot control the vehicle.
- Three factors that contribute to the hydroplaning effect are:
  - Water depth: Normally a quarter inch of water is enough to cause hydroplaning.
  - Tire condition: Tread depth, air pressure, design, and width can affect hydroplaning.

Skids (continued)

Vehicle speed: The faster the tires are rotating, the more likely that the vehicle will skim the surface of the water. Total hydroplaning on one inch of water may be expected at about 58 mph, and partial hydroplaning can occur at significantly slower speeds.

See the Table on the following page.

TABLE OF SPEEDS AT WHICH TOTAL HYDROPLANING MAY OCCUR WHEN STANDING WATER EXCEEDS TIRE TREAD DEPTH

(BASED UPON FORMULA $\sqrt{\text{TIRE PRESSURE}}$ x 10.3 = speed in MPH)

TIRE PRESSURE IN P.S.I.	SPEED IN MPH
15	39.9
20	46.1
25	51.5
30	56.4
35	60.9
40	65.1
45	69.1
50	72.8
55	76.4
60	79.8
65	83.0
70	86.2
75	89.2
80	92.1
85	95.0
90	97.7
95	100.4
100	103.0

Brakes

1. Wet Brakes

- Wet brakes can result in poor response to brake pedal pressure, lengthened stopping distances and brake pull. Brake pull is most apt to occur when only one of the brakes becomes wet.

- If only the left front brake becomes wet, the vehicle may pull to the right and vice versa. Brakes may be dried by lightly riding the brake pedal with the left foot while driving at moderate speed for a short distance. Excessive or lengthy pedal "riding" may cause the brake pads or lining to become glazed and, subsequently, permanently inefficient.

2. Brake Failure

This will either be a result of a mechanical malfunction or overheating in the braking system. Each particular situation will dictate what the best course of action is. Downshifting to the lowest gear available may reduce vehicle speed enough to steer around a hazard.

- Should total brake failure occur, the parking brake should still operate. The parking brake should not be applied to the point of locking the rear wheels except under the most dire of conditions. If the rear wheels are allowed to skid for more than a short distance, the driver could lose control of the vehicle. When using the parking brake, application should be controlled with the left foot on the parking brake pedal while the brake release is simultaneously disengaged with the left hand. A driver experiencing total brake failure still retains steering and throttle control of the vehicle. Panic and indecision can result in losing complete control of the vehicle when resolute action is most needed. The design of the parking brake in many vehicles is such that damage to the parking brake system may occur during this type of use.

Environmental Conditions

1. Snow and Ice

- It is important that each driver understand the problems inherent in driving on snow and ice, and what defensive driving techniques may be employed to reduce the risk of becoming involved in a traffic collision. While snowfall in many portions of California is rare, drivers may find themselves driving under relatively icy conditions.

- Snow and ice can combine to create some of the most dangerous of driving conditions. A snowstorm can reduce visibility to only a few feet. The single most hazardous factor created by snow and ice is the greatly reduced coefficient of friction. Of particular concern is a condition called "black ice". Black ice is frequently unseen because it is non-reflective and resembles bare pavement. Vehicle speed should be kept low, and control of the vehicle must be pre-planned, smooth and deliberate. On an icy road, never stop at the bottom of a hill, low side of a banked curve, or any place where another driver may not have sufficient distance to stop.

- Ice and snow tend to accumulate more in some places along roadways than others. Obviously, a shaded portion of roadway would retain ice longer than a sunny portion. Bridges and overpasses always freeze up sooner than the adjacent roadway surfaces because the cold air under them reduces the temperature of the pavement surface. While the warmth of day might melt the ice which had accumulated along the surface of a highway, ice could remain on bridge surfaces.

- Remember that as temperatures drop during the evening, ice may again form on highway surfaces, even though it may not have snowed or rained. When driving under these conditions, drivers must anticipate lengthened stopping distances and sharply reduced traction around curves.

Environmental Conditions (continued)

- The most effective braking method under slick road conditions is threshold braking. Do not "pump" the brakes.

2. Reduced Visibility

- Fog, dust and smoke can occur in sufficient concentrations to significantly reduce visibility. When this happens, speed must be appropriately reduced. When driving through smoke, dust or fog during darkness, headlights should be operated on low beam. In thick fog, dust or smoke, high-beam light will reflect back into the eyes, increasing glare and further reducing vision. When driving for a prolonged period of time under these conditions, the combined eye strain and concentration may have an adverse effect on the driver's judgment. Should one find oneself becoming unusually sleepy, consider pulling off the roadway and walking around the vehicle or, if possible, have a partner drive.

- Fog can accumulate in relatively small, dense patches. This is frequently called "tule fog" because it is normally associated with lowlands, standing water or depressions on the highway. When driving through fog, remember that visibility can change from good to bad within a very short distance. It is important to be seen by other users of the highway. Do not hesitate to turn on headlights during daylight hours while traveling through thick fog.

- Night Driving

    - At night, without any type of street lighting, a driver may find it impossible to see beyond the area illuminated by the vehicle headlights. Absent fog or thick amounts of dust in the air, drivers may utilize high-beam headlights to illuminate a greater area in front of them, thus

Environmental Conditions (continued)

increasing the limits of visibility. However, while driving at night, drivers should always adjust vehicle speed to allow for sufficient stopping distance.

- During darkness, a driver's depth perception and perceived rate of closure may be adversely affected. Before crossing or entering another roadway, it is advisable to double-check to ensure that cross traffic is not traveling faster than it appears. Keep in mind that other drivers might not accurately judge all vehicle speeds. Severe right-of-way collisions can occur at night. On occasion, drivers responsible for causing collisions will admit seeing other traffic, indicating that they misjudged the vehicle's speed.

- It is not uncommon to crest a hill or round a curve at night and find oneself blinded by the high beams of an oncoming vehicle. Do not stare directly into the other car's headlights; rather, attempt to focus the eyes toward the right shoulder of the road, away from the lights. This will allow better vision to see possible hazards and will minimize the constriction of the pupils. This, in turn, will assist in recovering and maintaining night vision.

- Rain

  - Every driver should be particularly careful while driving in the rain as collisions increase during rainy weather. The first rains of the season can create extremely dangerous driving conditions by the mixing of dust, dirt, motor oil drippings and oil released through the asphalt pavement. Drivers should always anticipate a reduced coefficient of friction with the first rains following a dry period.

Environmental Conditions (continued)

- In addition to creating an extremely slippery driving surface, rain also reduces vision, particularly at night. Water on the pavement reflects light back into the air instead of down across the surface of the road. Often on a rainy night, roadway markings are all but impossible to see and a driver may not be able to differentiate between the shoulder of the road and the actual driving surface. Rain on the windshield also reduces vision, as does oil film. Because vehicles operate under extremely heavy traffic conditions, this oil film will build up significantly on windshields within a relatively short period of time. Drivers should keep vehicle windshields as clean as possible to maximize vision.

- Window fogging can cause a significant reduction in vision. The temperature within the passenger compartment should be controlled to minimize window fogging. If the interior of the vehicle is kept too warm during rainy weather, moisture inside the car may evaporate, mixing with warm air and condensing on a cold windshield. The resulting condensation could completely obstruct vision through every window of the vehicle. Generally, operating the front defroster set on a cooler temperature is effective in controlling condensation. Utilizing the air conditioner with the heated thermostat selector on the "warm" setting will bring dry air into the vehicle and eliminate moisture condensation on the windows.

- Grades

    - A loss of power will occur as altitude increases. A driver should shift to a lower gear while ascending a grade to maximize power. Upon cresting a grade, consideration should be given to the fact that the driver will temporarily lose visibility to the front of the vehicle.

Environmental Conditions (continued)

- While descending a grade, greater demand will be placed on the brakes due to momentum and because the weight of the vehicle is being "pushed" downhill. Shift to a lower gear while descending a grade to minimize brake use and reduce overheating of brakes. The driver should be aware of the potential of increased vehicle speed while going downhill.

3. Animals on the Roadway

- Animals can appear on the roadway suddenly without warning. Even the most experienced drivers may have a tendency to swerve or brake to avoid an animal. Drivers must maintain control of their vehicles for the safety of themselves and others.

- The size of an animal can dictate what action a driver might take. For example, striking a small animal will seldom damage an automobile, but colliding with a large animal could seriously damage a car and even injure or kill the driver or other vehicle occupants.

- Animals on the roadway may become momentarily stunned by the bright lights of a vehicle. If drivers can see what appears to be two or more small lights or reflectors (possibly animal eyes) at the shoulder of the road, they should immediately reduce speed and prepare to take possible evasive action. Be aware that deer usually travel in groups at night.

4. Wheel Off Roadway

- On occasion, a driver may find that the right wheels of the vehicle have drifted from the pavement onto a soft or low shoulder of the highway. Many fatal collisions have resulted from drivers improperly attempting to reposition their vehicles back onto the highway.

Environmental Conditions (continued)

- Attempting to quickly pull the car back onto the road could cause complete loss of control. Tires could hang up momentarily on the edge of the pavement, then, as the steering wheel is turned even more, the car could suddenly gain traction on the pavement edge and swerve across the roadway into opposing traffic, or it could go into a broadside skid. In either case, the result could be serious.

- If the right or left wheel leaves the pavement, ease up on the throttle and straddle the edge of the road. Keep a firm grip on the steering wheel and when the vehicle has slowed down sufficiently, cautiously maneuver the vehicle back onto the roadway.

Other Factors

1. Headlights

- Utilizing headlights during the day can be a valuable aid in reducing the risk of having a traffic collision. Drivers are encouraged to use low beam headlights during all periods of reduced visibility, including fog, rain and especially when the sun is setting behind their vehicles.

- Headlights are an integral part of any Code-3 operation and can help to alert other highway users. Many emergency vehicles are wired so that when the emergency red lights are activated, high-beam headlights will automatically alternate between the right and left sides (wig-wags).

2. Carrying Gasoline

Occasionally an officer will have reason to transport gasoline for a disabled motorist. <u>Gasoline should never be carried in the trunk of the vehicle</u> because few containers are completely leak-proof. The closed trunk environment is conducive to building up potentially

Other Factors (continued)

explosive gasoline fumes. The mobile radio is mounted in the trunk and switches inside the radio can produce electrical sparks which can ignite gasoline fumes. When gasoline is transported in the vehicle, it should be carried on the right front floorboard. It would also be wise to open windows to permit ventilation.

notes

Chapter Six

commentary driving

Application

An officer drives on public highways under varied road and traffic conditions. While driving, the officer tells the instructor each move being planned and every observation made. Some of the driving points the instructor should observe are listed.

Pre-Driving

- Visual check around vehicle to note any hazards prior to moving vehicle
  - Checks mirrors
  - Adjusts seat and mirrors
  - Fastens seat belt
  - Releases parking brake
- Check dashboard warning lights (e.g., ABS, air bag)

General Driving Habits

- Proper hand position and steering technique
- Look over shoulder and backs cautiously
- Accelerates smoothly
- Stops smoothly

General Driving Habits (continued)

- Prepares for hazards
  - When accelerating
  - When braking
  - Foot poised over brake, etc.
  - At intersections
  - Near parked vehicles
  - Pedestrians, bicyclists
  - Road construction/maintenance
  - Emergency vehicles
- Makes turning and stopping intentions obvious by using signals
- Safe speed
  - On turns
  - Within speed limits
- Observes distracted and confused drivers
- Taps horn when appropriate
- Watches well ahead in traffic
- Doesn't wander in lane
- Maintains proper "space cushion":
  - When following another vehicle
  - Behind your vehicle
  - On both right and left of vehicle in traffic

General Driving Habits (continued)

- In front of vehicle when stopped in traffic

- Makes "eye contact" with conflicting traffic, when possible
    - Left "turners"
    - Pedestrians, bicyclists
    - Cross-traffic
- At controlled intersections
    - Anticipates amber light on "stale" green
    - Doesn't proceed on green light until looking in both directions
    - When stopping abruptly for amber or red light:
        - Checks rearview mirror for close-following vehicles
        - May elect to proceed through an amber light if in danger of rear-end collision
        - Stop smoothly behind limit lines
- Chooses lane that affords the fewest potential hazards
- Aware of traffic advisory signs:
    - Lane ends - merge
    - Signal, stop ahead
    - Curve speeds
    - One-way traffic

General Driving Habits (continued)

- Pedestrian crossing
- School zone
- Others

Freeway Driving

- Merges safely at proper speed
- Enters off-ramps at safe speed
- Minimizes lane changing
- Avoids other drivers' blind spots
- Anticipates movements of overtaken traffic
- Is constantly aware of traffic at rear and sides
- Maintains an escape route on both sides
- Provides an opportunity for traffic to merge
- Anticipates congestion and selects lane accordingly
- When exiting at an interchange or off-ramp:
  - Enters appropriate lane well in advance
  - Passes exit rather than losing "space cushion" or making unsafe lane change
- Observes hazards and potential hazards well ahead of the vehicle:
  - Disabled vehicles
  - Stopped traffic

Freeway Driving (continued)

- Warning signs
  - Freeway ends
  - Lane ends
  - Merging traffic
  - Freeway construction/maintenance
  - Others
- Doesn't solely rely on mirrors when changing lanes or merging:
  - Looks over shoulder
  - Awareness of blind spots

Night Driving

- Drives within visibility limitations
- Maintains clean windshield and windows
- Lowers high beams before required distance
- Avoids visual "fixation" on approaching headlights
- Uses headlights prior to complete darkness
- Is aware that darkness affects depth and speed perception

Attitudes

- Maintains defensive driving attitude
- Observes traffic laws
- Courteous to pedestrians and other traffic
- Good posture and alert

Attitudes (continued)

- Stays calm in annoying situations and demonstrates maturity
- Accepts advice, criticism in a positive manner
- Resists urge to "experiment" with horsepower
- Avoids distractions while driving

Commentary Driving

The student and instructor begin the commentary driving with the instructor driving first and demonstrating commentary driving. Commentary driving sessions should be limited to short periods.

- The instructor demonstrates by verbally announcing each movement made in operating the vehicle and every hazard or potential hazard observed.
- The student then begins the commentary driving. After a period of time the instructor makes suggestions or notes hazards the student may have missed.
- The instructor discusses the session and makes suggestions in areas where improvement is needed.
  - If the student shows numerous deficiencies, the student will be given counseling at the end of the session.
  - Additional commentary sessions should be considered.
  - The student's performance should be recorded for future reference.

Commentary Driving (continued)

- Students should be encouraged to practice commentary driving on their own
- Commentary driving should be considered during actual Code-3 operations

notes

Chapter Seven

vehicle dynamics

Introduction

Instructor's Note:
Situations or questions may arise which require mathematical computation to reach a solution. Formulas and reference tables have been provided in Appendix E for instructor assistance. A comprehensive glossary of vehicle operations terminology is included under Appendix D.

The law enforcement driver must be proficient in the actual operation of the vehicle, and knowledgeable about the dynamic forces at work. Proper application of this information enhances the driving expertise of the individual officer, and will reduce the number of traffic collisions involving law enforcement personnel.

Methods of Vehicle Control

- A vehicle has three basic areas or means of control:
  - Steering
  - Braking
  - Throttle
- Application of any or all of the control functions will have an affect on the distribution of the vehicle's weight.

Weight Distribution

- On a stationary vehicle, the vehicle's weight is distributed between the front and rear wheels.
- Due to engine placement, weight distribution is seldom equal. The engine location will determine where the greater part of the weight distribution will be located.
- On a vehicle in motion, the vehicle's weight will be constantly shifted and redistributed in relation to the mode of operation, i.e.:
  - Steering
  - Braking
  - Accelerating

Weight Transfer

Weight transfer is the shifting of weight to the front, rear, or either side of a vehicle caused by acceleration, deceleration, braking, or steering.

1. Longitudinal Weight Transfer

Longitudinal transfer of weight occurs while braking, accelerating, or decelerating. During acceleration, weight is transferred to the rear. Under certain conditions, this can increase traction and may help a driver retain or regain control of the vehicle.

Applying the brakes or decelerating transfers weight to the front of the vehicle and compresses the front suspension. If too much forward weight transfer is attained while entering a curve, the lightened end of the vehicle may become subject to oversteer. Forward longitudinal weight transfer may also prove hazardous if introduced prior to traversing dips, potholes, or railroad crossings.

Weight Transfer (continued)

2. Lateral Weight Transfer

Lateral weight transfer occurs when a car is turned to the right or left. This movement causes the vehicle suspension to be compressed on one side and expanded on the other. Normally, as a turn is completed, the suspension system overcomes the effects of centrifugal force, returning the vehicle's chassis to its normal position. However, if the vehicle is turned in one direction and immediately turned in the opposite direction prior to stabilizing, this stored potential energy in the suspension system can induce a violent lateral weight transfer.

When negotiating a series of reversing turns, (that is, swerving from one direction to another), the transfer of weight can have a cumulative effect, each lateral transfer becoming more violent than the one preceding it. If not properly compensated for, the vehicle will ultimately spin out of control. Drivers must consider how their vehicles will react to each steering maneuver. Smoothness of operation in steering, braking and throttle usage are the only effective ways of minimizing lateral weight transfer.

3. Spring Loading

- Approximately 80% to 90% of a vehicle's weight is supported mainly by its springs.
- When weight transfer occurs, the suspension springs are compressed or extended depending on how the weight is transferred.
- The extension or compression of the vehicle's springs is a reflection of energy build up, and is referred to as spring loading.
- Spring loading presents its greatest problem in vehicle control by a sudden or violent release of the built up energy.

Weight Transfer (continued)

- Some vehicles are equipped with torsion bars in lieu of springs on the front end. The torsion bars will "twist" instead of compressing and extending like springs.

4. Control Considerations

- Weight transfer cannot be totally eliminated from a vehicle in motion, and is a definite hazard in high-speed vehicle operation.
- It can be controlled to a certain extent and minimized through smooth operation of the vehicle's controls and use of proper roadway positioning.
- Forward longitudinal weight transfer can also have a negative effect prior to transversing dips, railroad crossings, chuckholes, etc. A driver encountering these unexpected driving hazards should:
    - Brake and reduce speed as much as possible prior to the hazard.
    - One of the techniques that officers may use to maintain control of their vehicles is to minimize the forces that are working on the vehicle to force it out of control. While it is difficult to reduce the amount of force acting on a vehicle without reducing the speed of the vehicle, the vehicle operator can control and minimize the effects that the forces have on the vehicle. The most visible demonstration that can be seen is in the vehicle operator's ability to control weight transfer in a vehicle. While the operator cannot control the actual force causing weight transfer, through the applications of proper techniques the weight transfer itself and the control problems caused by weight transfer can be reduced.

Chapter Eight

vehicle control techniques

Introduction

Control Techniques can be applied to vehicle operations regardless of the type of driving activity or vehicle speeds. Smoothness and coordination of vehicle control techniques will result in maximum safe control of the vehicle. Driving techniques emphasized will include steering control, speed judgment (throttle application), braking and road position.

Steering Control

1. **Driver Seat Position**

   - Driver comfort.
   - Efficiency in vehicle control.
   - When properly seated, drivers should be able to extend their arms forward comfortably and have the wrists "break" over the top of the steering wheel.
   - Drivers should fasten safety belts and be at least 12" from the air bag.
   - Drivers should adjust rear and sideview mirrors.

2. **Adjustable Steering Wheels**

   - Most vehicles currently in use are equipped with adjustable steering wheels.

Steering Control (continued)

Instructor's Note:
Ten and two o'clock positions may involve danger from air bag deployment.

- While there is technically no "right" or "wrong" position, the driver should select a wheel position for comfort and steering efficiency, while not obstructing the view of the speedometer.

3. Steering Method – Two-Hand Shuffle Steering Technique

- Hand positioning
  - Steering wheel is portrayed as a clock for hand position locations.
  - Hands are placed at nine and three o'clock positions (Optional: eight and four o'clock).
  - Hands do not leave the steering wheel.
  - Both hands do an equal and like amount of work.
  - Keeping hands lower on wheel is more natural and comfortable, less strain in shoulder muscles.
- Turning Maneuvers
  - Right hand operates right side of the steering wheel, left hand operates left side.
  - Neither hand crosses over the twelve o'clock nor under the six o'clock wheel position.
  - Push/pull technique - shuffle steering wheel between hand.
- Advantages of Two-Hand Shuffle Steering
  - Maximizes steering accuracy.
  - Safer and more effective recovery from steering input.

Steering Control (continued)

- Maximum vehicle control by minimizing weight transfer.
- Prevents radio cord from wrapping around steering column.
- Minimizes air bag deployment injury.

4. One-Hand Reverse Steering Technique

- The body is rotated to the right while in the seated position.
- The right hand and arm are placed on the passenger seat backrest for stability.
- Vision is directed over the right shoulder to the rear.
- The left hand is positioned on the steering wheel at the twelve o'clock position and does all the steering. Palming is necessary with this steering technique.
- Pressing the left leg against the bottom of the steering wheel will help stabilize the wheel.
- The left foot is braced on the floorboard to provide driver stability and increased body elevation for better rear vision.

5. Two-Hand Reverse Steering Technique

- Body Positioning
    - The body is rotated to the right while in the seated position.
    - Right shoulder is pressed into the back of the seat.
    - Vision is directed over the right shoulder to the rear.

Steering Control (continued)

- The left foot is braced on the floorboard to provide driver stability and increased body elevation for better rear vision.
- Do not rely solely on vehicle's mirrors for viewing while driving in reverse.

- Hand Positioning
  - Left hand at twelve o'clock position.
  - Right hand at five o'clock position.
- Steering Technique
  - Left hand does all the steering, utilizing that portion of the wheel between the nine and three o'clock positions.
  - The right hand serves merely as a "brake," grasping the wheel when it becomes necessary to reposition the left hand.
- Controlled Speed Backing
  - The steering wheel is held with a relaxed grip. The wheel is passed readily through the right hand.

6. Vision Direction

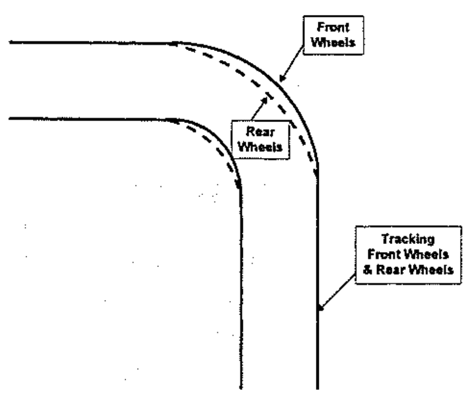
- While traveling in a forward direction, the driver concentrates on the areas to the front of the vehicle. Scanning of the side and rearview mirrors is encouraged for reference.
- While traveling in a reverse direction, the driver's attention is focused to the vehicle's rear (direction of travel). This condition will prevail the majority of the time. However, the four corners of the vehicle must be monitored occasionally especially when operating in very close quarters.

Steering Control (continued)

7. Late Steering (Delayed Steering)

- Late steering can be a problem in reverse, the wheels that provide steering are "following" the driver, the rear of the vehicle must be "pointed" by proper use of the front wheels. Steering control is not maintained at the "leading" end of the vehicle because the rear wheels cannot be turned. The driver must start the turning maneuver approximately ten feet earlier than when driving forward. If late steering occurs, the only way to compensate is to steer quicker with more steering input.

Rear Wheel Cheat

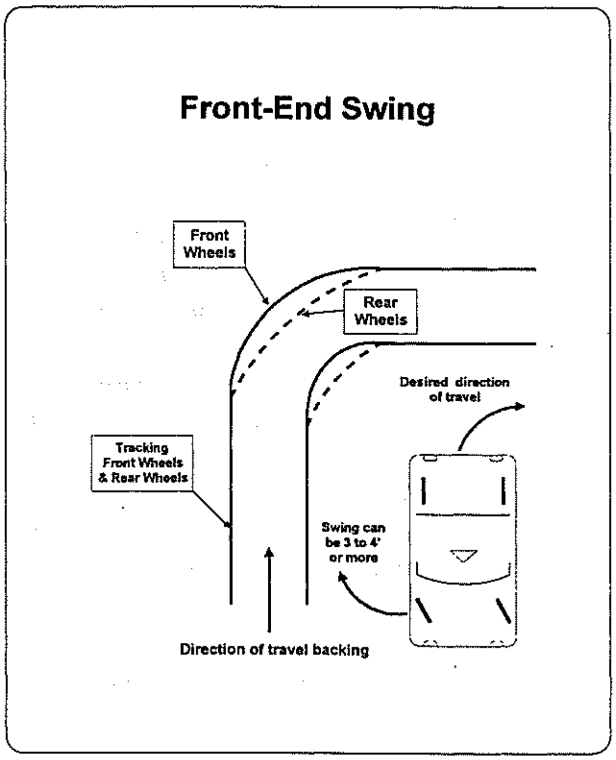


8. Rear Wheel Cheat

- Rear wheel cheat occurs any time a vehicle is turned from a straight path. While driving forward and turning in either direction, the rear tires will follow a path inside of that traveled by the front tires. In most vehicles, the path of the rear tires may be as much as 36 inches closer to the inside of the turn than the path of the front tires. The severity of rear wheel cheat is in direct proportion to the degree of the turn attempted and the vehicle wheel base. Consequently, the sharper the turn, the greater the rear wheel cheat.

Steering Control (continued)

- There are two methods of compensating for rear wheel cheat. The first method is to turn wide enough to allow space for the rear wheels of the vehicle to clear a hazard or obstacle. The second method is to proceed in a straight line until the rear axle is aligned with the hazard or obstacle. The rear axle is the pivot point of the car's turning movement and should proceed in a straight line until the rear axle is aligned with the hazard or obstacle.



9. Front-End Swing

- Backing a vehicle brings different dynamics into play. The most obvious factors are limited vision to the rear and the fact that the vehicle steering is now reversed. The driver must assume a somewhat awkward posture to afford adequate rear vision. Remember, the rear axle is the pivot point of the turning movement.

- When backing, the front of the car will swing out as much as four feet opposite the direction that you are turning. Front-end swing can cause a collision if the driver fails to allow sufficient clearance.

- When backing and turning in confined areas, it is important to position the vehicle as closely as possible in the direction the vehicle is to be turned. A driver should turn the vehicle no more than necessary to accomplish the maneuver. This will minimize front-end swing and reduce the potential for a collision.

Steering Control (continued)

10. Excessive Steering

- An excessive amount of steering input for the degree of turning radius desired. As speed is increased, excessive steering will result in additional weight transfer, potentially leading to loss of vehicle control.

11. Insufficient Steering

- An insufficient amount of steering input for the degree of turning radius desired. As speed increases, additional steering input is required.

12. Caster Effect

- Vehicles are engineered to primarily be driven in a forward direction.

- Vehicle suspensions possess a quality known as caster. This is the effect that helps to straighten out the front wheels after driving around a corner.

- Caster also gives a vehicle stability while traveling forward. Unfortunately, this force destabilizes the vehicle when driven in reverse.

- As a vehicle accelerates rearward, the front (steering) wheels will have a tendency to turn in one direction or another. This condition can be dealt with by:

  - Keeping the steering wheel totally immobile while backing in a straight line.

  - Decelerating slightly to safely negotiate turning maneuvers as the turning force increase.

13. Steering Direction

- Drivers sometimes become confused with steering direction in reverse maneuvering.

Steering Control (continued)

- A basic rule of thumb is to turn the steering wheel in the same direction in which the vehicle must travel.

14. Rolling Friction

Directional friction caused by tires rolling along the road surface. The front wheels of the vehicle must be rolling in order for the vehicle to be steered.

- Motion is transmitted to the vehicle by friction between the tires and the roadway.
- The front tires must be rolling to achieve directional steering in a vehicle.
- If the tires stop rolling, the vehicle will not respond to steering changes.

15. Elements of Steering Control

- Smoothness and accuracy of steering is essential for maintaining vehicle control.
- Minimal steering input, as necessary, is best for control of the forces at work on a turning vehicle.
- Any time the steering wheel is turned while the vehicle is in motion, a lateral or sideways force (centrifugal force) exerts pressure in the opposite direction from that in which the vehicle is turning.
- As the steering wheel is turned, a force pushes on the vehicle's center of gravity. If this force is greater than the force the vehicle can accept, it can cause loss of traction, which will result in loss of control.
- This force can only be altered by a change of speed or direction.

Throttle Control

1. Application

- Full throttle - total depression of the accelerator pedal, regardless of end result of speed.
- Maximum throttle - that amount of throttle necessary to obtain desired speed.
- Maximum acceleration - accelerating as quickly as possible to full throttle without losing traction, primarily when exiting a turn.

2. Control

- Smoothness in operation.
- A definite and immediate affect on vehicle weight transfer.

3. Affect on Road Position in Turning Maneuvers

- Increase of throttle will widen the arc of a turn driving line.
- Decrease of throttle will tighten the arc of the driving line in a turn.

Speed Judgment

The ability of a driver to estimate a safe vehicular speed for any given driving situation. Considerations regarding speed judgment include:

- Road conditions
- Type of driving maneuvers
- Driver limitations

Speed Judgment (continued)

- Vehicle limitations
- Weather conditions

1. Closure Rate

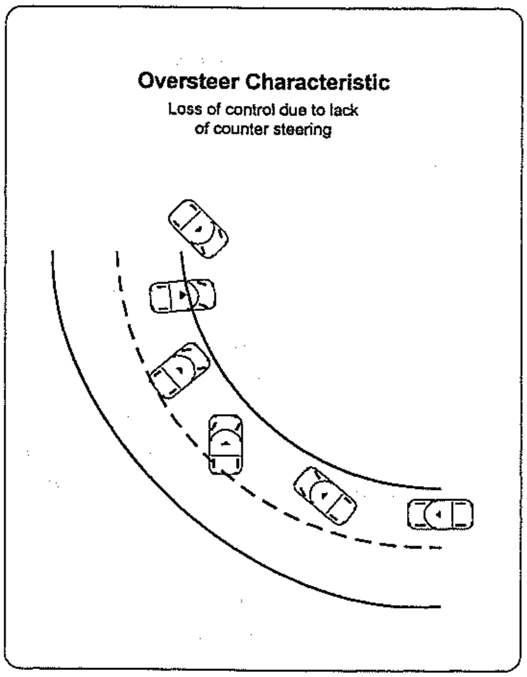
- Being able to judge the proper rate of deceleration necessary to negotiate a curve, avoid a hazard, or stop.

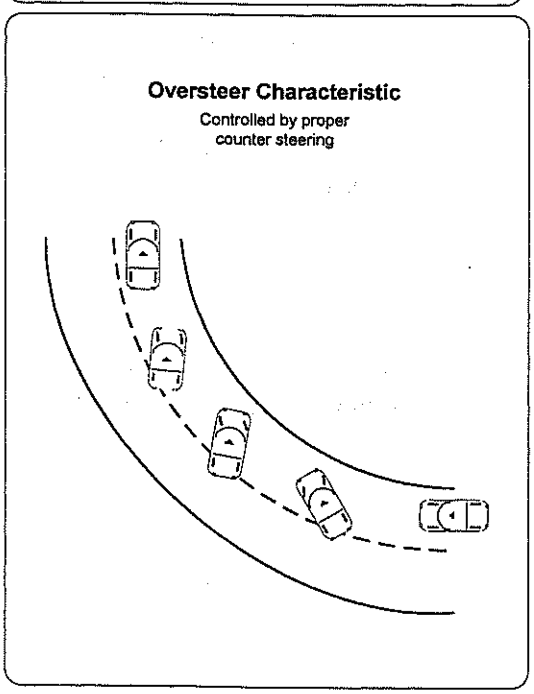
2. Entry Speed

- Entry speed in a turn is a critical factor. Turns should always be entered at safe speeds. Just because a driver manages to keep the car on the pavement through a turn does not mean that the speed prior to entering the turn was appropriate. At the proper speed, a driver can maneuver the vehicle into the desired road position while negotiating a turn.

- Proper positioning of the vehicle through a turn will be impossible to attain if speeds are excessive prior to entering the turn. If a turn is entered at an unsafe speed, the driver can only attempt to keep the car on the roadway. Throttle application may cause additional problems. The rear wheels push only in the direction they are traveling and will most likely cause the vehicle to understeer, completing the turn on or toward the outside. Because the car is at the outer limits of adhesion, braking may have the same effect.

Speed Judgment (continued)





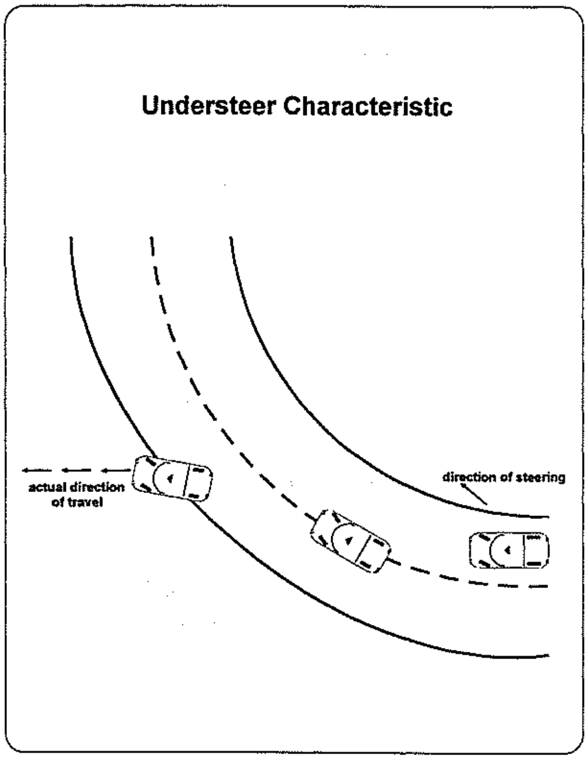
3. Traction

The result of adhesion between the roadway surface and the vehicle's tires.

4. Vehicle Oversteer Condition

- Oversteer occurs when the rear tires lose traction and the rear of the car skids toward the outside of the turn. Oversteer is a tendency to tighten the vehicle's turning radius.
- Oversteer is caused by excessive throttle in a turn; sudden and/or excessive input of steering; or over-braking in a turn.
- To recover from an oversteer condition, reduce throttle, countersteer and do not brake. Be prepared for a secondary skid. It is imperative to remove the countersteer when the vehicle begins to recover.

Speed Judgment (continued)



5. Vehicle Understeer Condition

- The loss of traction of the front tires which tends to force the vehicle to continue in a straight line.
  - Driver's attempt to negotiate a curve at too high a speed. Adhesion between the front tires and roadway is lost, and the car cannot be turned to the degree necessary to round the curve.
- When loss of traction occurs, a driver may experience the extreme example of understeer with the front wheels turned completely to lock and the car proceeding straight ahead. As the vehicle slows, traction will be restored and steering regained.

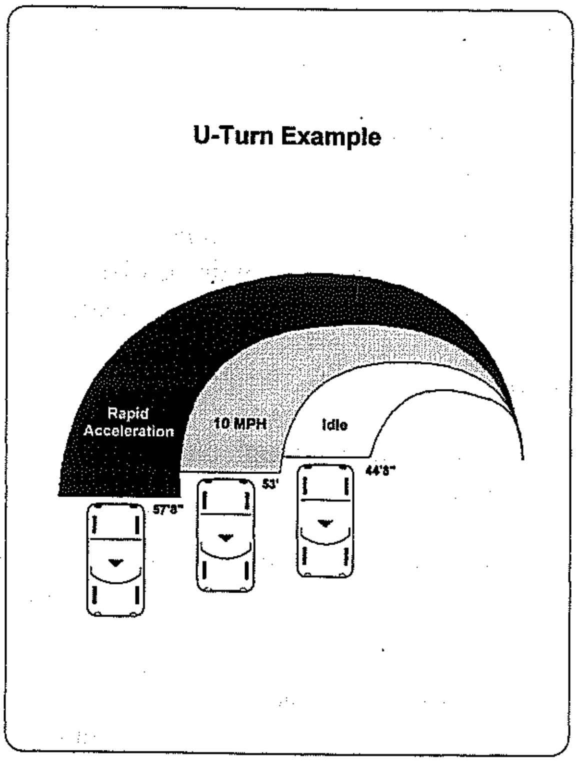
6. Centrifugal Force

- The force on a body in a curved motion that is directed away from the axis of rotation. A force which acts or impels an object away from the center of rotation.
- The force will increase relative to the speed and severity of the turn.

Speed Judgment (continued)

7. Centripetal Force

The force on a body in a curved motion that is directed toward the center axis of rotation. The force required to keep a moving mass in a circular path. A force which acts or impels an object toward a center of rotation.



8. "U" Turn Example

A simple "U" type turn can serve to illustrate the effects of speed on a vehicle in a turning situation.

Speed Judgment (continued)

9. Slip Angle

- When a vehicle is in a turning mode, the severity of the turn plus the speed of the vehicle creates centrifugal force. This outward pushing force prevents the vehicle from exactly following the intended driving line. The difference between the direction of the steering wheels and the vehicle's path of travel is known as "slip angle."
- As a vehicle travels in a straight line, the angle remains constant.
- An increase in centrifugal force will increase the vehicle's slip angle.
- The turning radius of the vehicle becomes larger as the contact patch or footprint of the tire is distorted by increasing cornering force (centrifugal force).

10. Visual Horizon

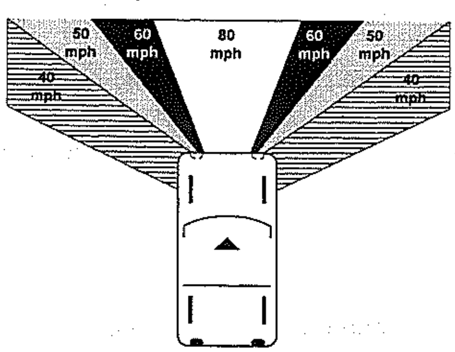
- Most drivers do not look far enough ahead when operating a vehicle.
- As speeds increase, the effect is amplified with vision being reduced further to the area directly in front of the vehicle.
- A driver must make a conscious effort to raise the visual horizon to enable timely and proper reactions to changing circumstances.

Speed Judgment (continued)

Peripheral Vision

Driving at

1. 40 mph you have 120 degrees of vision
2. 50 mph you have 90 degrees of vision
3. 60 mph you have 60 degrees of vision
4. 80 mph you have 30 degrees of vision



11. Peripheral Vision

- Peripheral vision is the lateral degree of perception present when the eyes are focused straight ahead.
- An average driver with good peripheral vision can see about 180 degrees laterally when the vehicle is stationary.
- The degree of peripheral vision is reduced significantly as vehicle speeds and stress (i.e. pursuit) increase. This leads to what is commonly known as "tunnel vision".

180°	-	0 MPH
120°	-	40 MPH
90°	-	50 MPH
60°	-	60 MPH
30°	-	80 MPH

12. Reaction Time Lapse

When presented with an emergency situation requiring driver reaction, both the time of action and distance traveled are noteworthy.

Speed Judgment (continued)

- The remedial action can be separated into two distinct areas;
  - Driver perception phase
  - Driver decision/reaction phase
- Driver perception phase (.75 sec.)

  When confronted with an emergency situation, the driver must see the danger to initiate corrective action.
- Driver decision/reaction phase (.75 sec.)

  Decision/reaction time is defined as the lapse of time between the application of a stimulus (danger) and the beginning of a response (braking and steering, etc.).
- Time Lapse
  - It has been calculated that the perception/ decision/reaction process is approximately 1.5 seconds in lapse time for the "average" driver.
  - This time frame would probably be lengthened if the situation is complex or the driver has an impaired physical condition.

Speed Judgment (continued)

- Vehicle Distance
  - For each 1 MPH, you travel 1.5 FPS.
    - 10 MPH = 15 FPS
    - 20 MPH = 30 FPS
    - 30 MPH = 45 FPS
  - For the distance traveled in 1.5 seconds, multiply your speed by 2.2.
    - 10 MPH x 2.2 = 22'
    - 20 MPH x 2.2 = 44'
    - 30 MPH x 2.2 = 66'

notes

Chapter Nine

braking

General Information

Performance and/or Code-3 driving situations require that the operator be able to rapidly slow and turn the law enforcement vehicle. Control of the vehicle during the braking and cornering maneuver is most difficult because that is the time when the physical forces acting on the law enforcement vehicle are at their greatest and the likelihood of losing control of the vehicle is at its highest. This becomes most obvious when one examines the high percentage of traffic collisions that occur during braking and cornering activities.

Proper brake application is essential to safe and efficient vehicle operation. Along with steering and throttle, brakes are available to a driver as a means of vehicle control.

Overheating of the brakes can probably be listed as the leading cause of mechanical malfunction in law enforcement vehicles. This can be directly attributed to improper or overuse of the braking system during emergency response or pursuit situations.

Braking Dynamics

- Brakes slow or stop the vehicle's wheels from rotating, they do not stop the vehicle.
- The stopping of a vehicle in motion is a result of deceleration of wheel speed in relation to vehicle speed.

Braking Dynamics (continued)

- The maximum amount of friction between tire and road occurs just before tire rotation ceases completely.

- Friction produced by a brake application will generate heat within the components of the brake system.

- A vehicle in motion is a form of "kinetic" (moving) energy. To overcome the vehicle's momentum, the kinetic energy is converted to "thermal" (heat) energy by the friction generated in the braking process. This thermal energy is dissipated to the ambient atmosphere in the form of cooling.

Left-Foot Braking

- Many drivers have acquired the habit of "left-foot braking" when driving a car equipped with an automatic transmission. It is true that the use of the left foot could, if positioned on the brake pedal at all times, slightly decrease the normal reaction time; however, unless the left foot is poised over or upon the brake pedal, it takes no longer to brake with the right foot. Following are some reasons that left-foot braking should not be practiced.

- Drivers who spend the majority of their time in a car equipped with an automatic transmission can become quite adept at left-foot braking. However, in an emergency situation, when driving with a standard transmission, they will probably find themselves depressing the clutch pedal when they need immediate severe braking.

- A driver is best braced when the left foot is placed against the left floorboard of the car and the right foot is positioned over the accelerator pedal. The support provided will stabilize the driver's position behind the steering wheel and help retain control during sudden

Left-Foot Braking (continued)

vehicle movements that occur during evasive action, mechanical failure, or actual impact with another object.

- In an emergency stop, the "left-foot braker" can end up with both the accelerator and brake pedal depressed.

- "Left-foot brakers" have a tendency to allow their left foot to rest on the brake pedal, actually pushing it down. It is unlikely that the foot will remain poised over the pedal without touching it for any length of time. Even a slight pressure can cause brakes to rub and become heated. The constant rubbing of brake shoes and pads will result in rapid destruction of disc-brake rotors, brake drums, pads, and shoes. Operators may find themselves with inadequate brakes when they need them most.

- The driver who rides the brakes with the left foot causes constant illumination of the brake lights which reduces their warning value.

- Left-foot braking can be justified when driving with a cold engine which is running at fast idle in congested areas and at low speeds. Left-foot braking is also a means of drying out water-soaked linings while operating at normal speeds.

Controlled Braking

- Braking control can be related to the amount or degree of foot pressure applied by the driver to the brake pedal. This pressure can be theoretically measured on a scale of from 0 - 10.

- Zero on this scale would be the complete absence of any pedal pressure. A ten would be the maximum available braking resulting in the vehicle being placed in a four-wheel locked skid.

Controlled Braking (continued)

- Under normal operating conditions, a brake application to bring a vehicle traveling at 35 mph to a complete stop could be translated as a 4-5-6 on the firmness scale. This would result in the gradual decrease of vehicular speed and a smooth, controlled stop. Most drivers operate their brakes in this manner.

Threshold Braking

- In a high-speed driving situation such as an emergency response, it is advantageous to cover the greatest possible driving distance in the shortest possible time. To accomplish this goal, the vehicle should be maintained at its highest controllable speed for as long a period as circumstances allow.
- Braking should be confined to the shortest practical time and distance necessary for speed reduction or stopping. This can be accomplished by "threshold" or upper scale braking.
- Upper scale braking in this case, can be translated as 7-8-9 on the firmness scale. "Threshold" braking would occur in the 9 area on the scale.
- The term "threshold" implies that the vehicle's wheels are slowing in rotation just short of locking up, and the vehicle is on the threshold of a braking skid.
- Certain advantages are inherent to this braking method:
  - Allows speed maintenance over the greatest allowable distance.
  - Speed reduction occurs in the shortest possible time/distance.

Threshold Braking (continued)

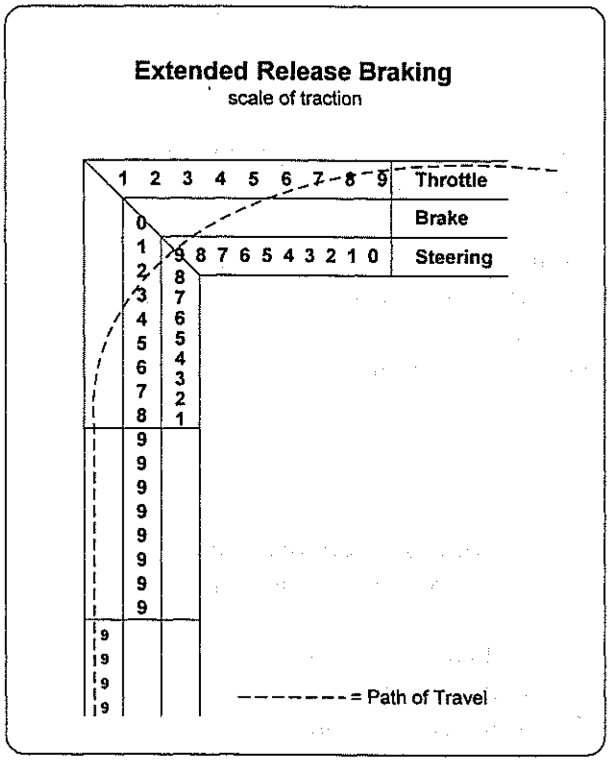
- The brakes are allowed a longer cooling period due to short durations of usage.
- Most effective way to stop a vehicle on a slick road.
- A substantial amount of weight transfer will occur during threshold braking.

Straight Line Braking

- In this particular form of brake application, speed is reduced to the desired level while the vehicle is traveling in a straight line.
- If applied to a high-speed turn situation, all braking would occur prior to steering input for the turning maneuver. The desired speed could then be maintained through the turn.
- The weight transfer incurred in braking is restricted to its simple longitudinal form and dealt with prior to entering the turn. The vehicle is now in a better position control-wise to accept the lateral weight transfer induced by the turning motion.
- Although the brakes are applied rapidly, the process should be smooth and controlled as opposed to a "stabbing" motion. Smooth brake application will transmit itself to smooth weight transfer. Brake release should also be done as smoothly as the application for controlled weight transition.
- Once the vehicle's speed is reduced to the desired turn entry level, the necessary amount of throttle is applied to maintain that speed to the apex.
- Steering is also input upon brake release in the amount necessary to bring the vehicle into the apex along the desired driving line.

Extended Release Braking (Trail Braking)

- The extended release braking technique begins as the vehicle is approaching a corner. The objective is to smoothly convert the traction generated by the front tires for braking into traction to be used for cornering. While driving in a straight line, the vehicle is rapidly brought to a threshold braking condition.



As the vehicle arrives at the point where the driver begins to input steering, the driver simultaneously begins to release the brakes and turns toward the apex of the turn. The driver continues to release the brakes proportionately to the input of steering in such a manner as to completely release the brakes at the same time as maximum steering occurs, ideally prior to the apex of the turn. This is also the point of maximum lateral force on the vehicle.

- The extended release of the brakes serves several functions. In many braking techniques the brakes are fully released as soon as the driver begins to input steering. This causes weight to transfer from the front wheels (loaded by the initial weight transfer caused by braking) to the rear. If the driver is abrupt with the release of brakes it can cause a violent transfer of weight away from the front wheels. This radical weight transfer from the front wheels limits the amount of traction forces that the front wheels can generate. This reduction of available traction at the front wheels happens at the same time when front wheel traction is most needed, at the initiation of the turning motion.

Extended Release Braking (Trail Braking) (continued)

In practice this can lead to a momentary "dead" feeling at the front of the vehicle until the weight transfers back to the front wheels and traction is restored. The extended release braking technique minimizes this upsetting effect on the vehicle by smoothing out the front-to-rear weight transfer and allowing a smooth transition to the inside-to-outside weight transfer. This smoothing out of the weight transfer allows the driver to control the vehicle by maintaining a consistent feel of available front-end traction.

A secondary benefit of the extended release braking technique is that it makes more roadway available for braking prior to arrival at the apex of a turn. This means that a vehicle may be under power closer to a turn prior to brake application, or be able to use a less severe brake application if the same braking point is used. The area of roadway between the initial steering point and the apex of the turn is available for braking and speed control.

- An additional consideration in favor of the extended release braking technique is the potential reduction in braking distance should the vehicle need to be stopped during the cornering maneuver. When using the extended release braking technique, the driver's foot is on the brake pedal up until the time when the foot must move to the accelerator pedal.

Should an emergency arise during the approach to the apex, such as the suspect vehicle crashing, the driver is in a position to immediately increase pressure on the brake and need not move the foot from a standby position. While this may be a small amount of time difference, it may be critical in an emergency situation.

Extended Release Braking (Trail Braking) (continued)

The primary advantage of the extended release braking technique is that it allows the driver to maximize the smooth operation of the vehicle and allows for maximum speed through the turn. This tends to maximize the potential control the driver has of the vehicle.

Brake Fade

- When brakes become overheated they will begin to lose their efficiency. This is termed brake fade. Brake fade can occur in both drum and disc brakes; often occurring on steep downgrades, or in a pursuit requiring frequent hard braking.
- At high temperatures, brake fluid may begin to boil, reducing the hydraulic pressure necessary for the brake system to function properly.
- Long before boiling temperature is reached, braking efficiency will begin to deteriorate.
- Normally, braking efficiency will return after a sufficient cooling period.

Anti-lock Brake System (ABS)

ABS is a significant safety feature on vehicles. The main feature of the system is to prevent brake lockup, while stopping the vehicle as quickly as possible. In an emergency situation, the average driver will apply maximum pressure to the brake pedal, causing the tires to skid in a non-ABS vehicle. ABS is designed to prevent locked wheel skids caused by braking. In the event of an ABS failure, the normal braking system continues to operate.

In order to have steering, there must be what is called "rolling friction". In other words, the front tires must be rolling in order to steer the vehicle. When the brakes are locked, the tires are skidding, and the vehicle will continue to travel straight ahead,

Anti-lock Brake System (ABS) (continued)

regardless of the amount of steering input. So, in a braking skid, the vehicle will go straight, even if the steering wheel is turned full lock to the left or right.

Sensors on each wheel transmits information to a mini-computer which modulates the braking pressure. This will prevent lockup, thereby maintaining rolling friction and steering ability. In most cases, the stopping distance is shorter. ABS brakes are more effective than non-ABS brakes when the road surface has a reduced coefficient of friction, such as water, ice, snow, etc.

ABS produces a pulsation of the brake pedal and makes a noise similar to that of the "metal-to-metal" sound of worn brake pads. These are the same symptoms that may occur in a non-ABS system that is failing. If the driver is not familiar with these sounds and the feel, the driver may believe the brakes are failing, and begin to "pump" the brakes. In most circumstances, the brake system is properly operating and, therefore, the pedal should not be pumped. Once ABS is applied, the braking pressure should be held steady, letting the system work. "Pumping" the brakes overrides the ABS feature and braking efficiency will deteriorate.

When crossing dips or bumps with the brakes applied, the driver may experience an ABS activation as the weight of the vehicle lifts up. This is normal and proper, as the sensors react to the braking system trying to lock up. There may be a slight increase in braking distance due to a less efficient braking ability caused by uplifted weight transfer.

Instructor's Note:
Manufacturer videotapes are available which clearly illustrate ABS (See Appendix A).

Drivers who have never experienced ABS should practice stopping several times with the system activated. This can be accomplished by sudden hard braking from 50 mph on a safe road. This will allow the driver to feel the pulsing of the brake pedal and hear the associated sounds.

notes

Chapter Ten

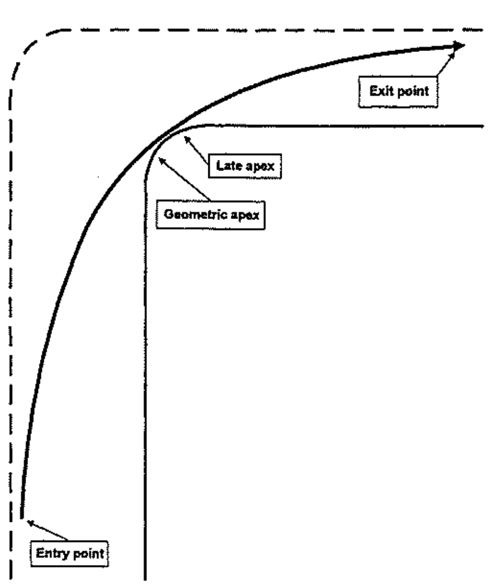
roadway position

Roadway Position

The position of the vehicle on the roadway to best facilitate the negotiation of a turn or curve at a safe rate of speed; the use of the available roadway to its fullest advantage with the least amount of steering. Roadway position could also be referred to as the "driving line" through a turn.

Typical Turn Classifications

90 Degree Turn Constant Radius



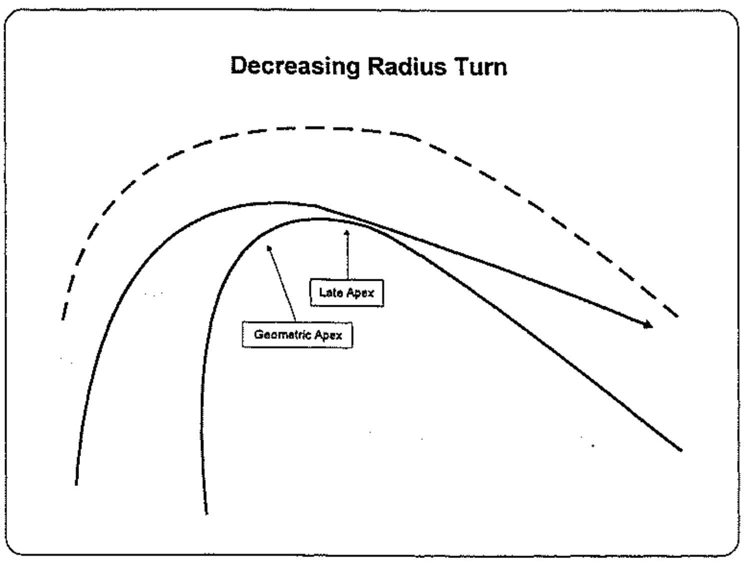
1. Constant Radius (90° Turn)

- The most efficient driving line to negotiate a ninety degree turn is one with a constant radius. This turn would become a full circle if permitted to continue a full 360°.
- There are three essential points of reference that are relevant to the turning maneuver.
  - **Entry** - placing the vehicle to the extreme outside edge of the available roadway. This is also the point of steering input to perform the turning maneuver.
  - **Geometric Apex** - the tightest innermost part of the available roadway. It is directly centered within the driving arc.

Typical Turn Classifications (continued)

- **Exit** - placing the vehicle at the extreme outside edge of the roadway. If steering is input correctly from entry and maintained to the apex, the vehicle will seek the exit point on its own accord.

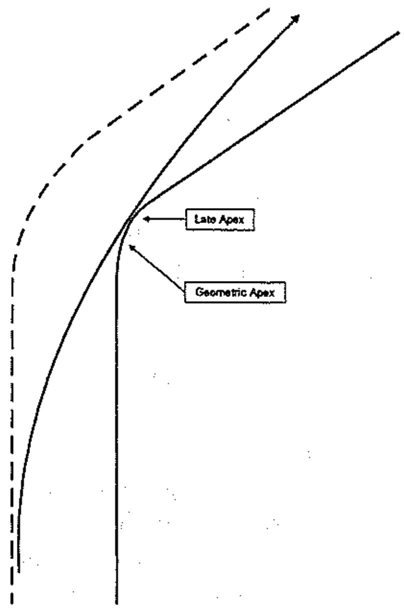
- Driving Advantages
  - Minimize weight transfer
  - Minimize steering input
  - Smooth vehicle control
  - Greatest attainable safe speed through the turn.



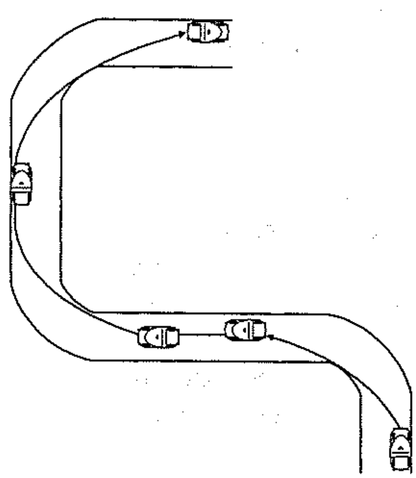
2. Decreasing Radius

- A continually tightening turn.
- The driving speed will be decreased in proportion to the tightening of the turn.
- Negotiate the turn by taking the line of least resistance to the vehicle's travel.

Increasing Radius Turn



Road Position and Turning: Multiple Turns



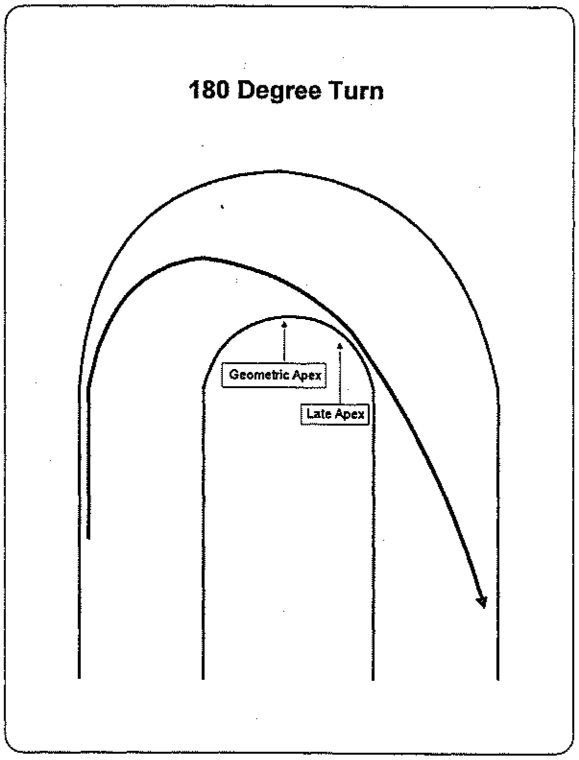
3. Increasing Radius

- A turn which gradually straightens.
- Vehicle speed will be slower at the entry point, and can be increased upon exiting

4. Multiple Turn Situation

- Multiple turns create a situation where vehicle control problems are likely to occur.
- Correct roadway position through multiple turns is a path that will reduce the amount of directional change from one turn to another. This will lessen side-to-side weight transfer, give the tires improved traction, and allow greater control.
- In order to drive the correct roadway position, the driver will have to equalize turning motions from one turn to another while maintaining a consistent speed.
- The reason for equalizing turning motions and speed is that these two ingredients create centrifugal force.
- Correct roadway position will vary as to the configuration of the turns. The driving line selected should provide for optimum efficiency and control at the exit of the final turn.

Typical Turn Classifications (continued)



5. 180° Turn

- The configuration of this turn corresponds to driving through one half of a circle.
- Entry should start from the extreme outside edge of the available roadway. This line will be maintained to the approach of the apex. Although not any faster speed-wise than an "inside" or "outside" driving line, this route provides a degree of safety for maneuvering in the case of a slide.
- The apex area is relatively close to the exit of the turn, not geometrically located.
- Exit point will be on the outside of the roadway, beyond the apex area.

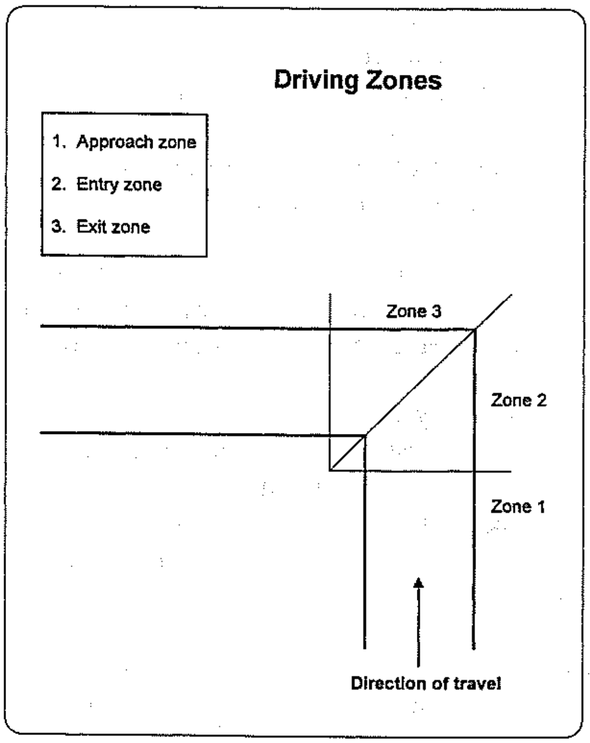
Control Considerations

To establish proper roadway position through a turn, the driver must scan the curve during the approach. The path of travel should bring the vehicle to the apex or low side just prior to the exit of the turn. The car should be held as close as possible to the apex to allow adequate distance when exiting the turn. Vehicle stress and weight transfer may be reduced by allowing the car to smoothly drift out to the high side (outside) upon leaving the turn.

Speed Control

For purposes of speed control in a turning maneuver, consideration must be given to throttle and brake application in relation to the vehicle's position within the driving line.

This is accomplished by dividing the driving line into zones of activity regarding brake and throttle usage.



1. **Zone #1 Approach (Speed Adjustment) - This area consists of the approach up to the turn entry point. This can be accomplished by:**
   - Speed increase
   - Speed reduction
     - Straight-line threshold braking
     - Extended release
2. **Zone #2 Entry - This area consists of the turning arc (driving line) between the entry point and the apex. The following two methods are acceptable:**
   - No throttle is used until lateral weight transfer is set.
   - Vehicle speed may be maintained by appropriate throttle pressure.
3. **Zone #3 Exit - This area consists of the roadway from the apex to the exit point. Options are exercised in this area:**
   - Speed maintenance
   - Speed increase
   - Speed decrease

Reverse Driving Situations

- Reverse driving necessitates a different application of road position. The primary consideration is the swing of the vehicle's front end during turning motions.

- During constant, increasing, and decreasing radius turns, the part of the reverse driving line most affected will be the entry point. As soon as the steering wheel is turned, the vehicle's front end will begin its turning arc (swing). Sufficient room must be allowed between the vehicle and the curb line to permit a continuous driving line without steering alteration or impacting of obstacles.

- Limited area maneuvering presents the driver with other considerations. Driving limits may be imposed by roadway width, space between obstacles, or both.

- Should ample roadway width exist, a driving line which angles through the obstacle spacing should be used to take full advantage of the available driving area. This will benefit vehicle control through minimal steering input and consequently minimal weight transfer.

- Limited driving area may necessitate a driving line to crowd the existing obstacles or hazards. Depending on vehicle placement, the hazards will be kept close to the vehicle's right or left side. This will allow the vehicle to avoid a collision while maintaining the available roadway.

- A vehicle reference turning (pivot) point must be selected. This can be either the vehicle's rear bumper or rear axle, based on driver preference.

Formulas and Reference Tables

1. General Information

- The included formulas are offered for instructor reference, should the need arise to mathematically compute a given situation.
- While not all inclusive, the areas covered should suffice for the purpose of course instruction.

2. Conversion From Miles Per Hour to Feet Per Second

- Speed (MPH) X 1.467 = distance (FPS)
- Conversion generally taught as 1.5

3. Speed and the Effect Upon "Stopping Distances"

- Stopping distances are increased by the square of the rate of increase in speed. (V^2).
- If traveling three times as fast, you must square three, which equals nine. Then multiply the stopping distance of the slower initial speed by that figure.

4. Hydroplaning (NASA Formula)

- The square root of the tire pressure (P.S.I.) multiplied by 10.3 (constant) will give speed (MPH at which tire may begin to hydroplane).
- Before hydroplaning can occur, a sufficient depth of water must exist to submerse tire tread.

- The elements or contributing factors to hydroplaning are:
  - Water depth
  - Speed of vehicle
  - Tire condition - tire tread depth, pressure, design, and width

5. Reference Tables

The following reference tables are included in Appendix E:

- Coefficient of friction
- Comparative stopping ability
- Comparative starting ability
- Hydroplaning chart

Chapter Eleven

legal issues/liabilities

Introduction

It is imperative that EVOC instructors provide students with comprehensive information concerning the statutes and case law decisions that define the proper operation of law enforcement vehicles.

Officers routinely face the possibility of being held civilly liable for their actions or the actions of their subordinates in law enforcement driving activities. Certain general legal principles are common to the three types of law enforcement driving (non-emergency, emergency response, and pursuit). The concepts of "negligence," and "willful misconduct," are central to understanding how officers may be judged responsible for injuries sustained by third parties that arise from law enforcement driving operations.

Whether the injury arises from a deficiency during non-emergency activity, such as an officer's negligent placement of the vehicle during a routine call; an emergency response, such as failure to activate warning devices when responding to a life-threatening situation; or during the course of a pursuit which creates excessive danger to the public, injured parties frequently assert that the offending officer's conduct was unreasonable under the circumstances or that it constituted an intentional disregard for the victim's safety.

Officers must be aware of the potential for civil lawsuits filed against them by injured parties, either in state court or federal court. They must conduct their driving activities in non-emergency, emergency response, and pursuit modes so as to

Introduction (continued)

minimize liability to themselves and their agencies. Extreme disregard for the safety of the public or other officers may well constitute recklessness or willful misconduct that can serve as a basis for criminal sanctions against the officer or supervisor in either state court, federal court, or both.
The following statutes and comments provide an overview of relevant material for an instructor to know and utilize in preparing driver training instruction.

California Codes

Sections 17001, 17004, 17004.7 of the California Vehicle Code (CVC) discuss civil liability and immunity for public entities and public employees during the operation of a law enforcement vehicle within the scope of employment.

17001 CVC

Every public entity (state, county, city, etc.) is liable for death or injury to person or property proximately caused by a negligent or wrongful act or omission in the operation of any motor vehicle by an employee of the public entity acting within the scope of his employment.

17004 CVC

A public employee is not liable for civil damages on account of personal injury to or death of any person or damage to property resulting from the operation, in the line of duty, of an authorized emergency vehicle while responding to an emergency call or when in the immediate pursuit of an actual or suspected violator of the law, or when responding to but not upon returning from a fire alarm or other emergency call.

17004.7 CVC This Section provides immunity to a public entity from civil liability for personal damages, death or property damage resulting from a collision with a vehicle driven by an actual or suspected law violator pursued by a peace officer if the public employer adopts a written policy with the following specified minimum standards for a safe pursuit:

California Codes (continued)

- If available, there should be supervisory control of a pursuit.
- Procedures for designating the primary pursuit vehicle and for determining the total number of vehicles to be permitted to participate at one time in the pursuit.
- Procedures for coordinating operations with other jurisdictions.
- Guidelines for determining when the interest of public safety and effective law enforcement justify a vehicular pursuit and when a vehicular pursuit should not be initiated, or should be terminated.

Sections 21052, 21055, 21056, 21057, 21806, 21807, 22350 of the California Vehicle Code identify driver requirements for due regard for the safety of all persons on a highway, and specify that these provisions apply to all law enforcement officers.

21052 CVC

The provisions of this code applicable to the drivers of vehicles upon the highways apply to the drivers of all vehicles while engaged in the course of employment by this state, any political subdivision thereof, any municipal corporation, or any district, including authorized emergency vehicles subject to those exemptions granted such authorized emergency vehicles in this code.

21055 CVC

The driver of an authorized emergency vehicle is exempt from Chapter 2 through 10 of Division 11, and article 3 and 4 of Chapter 5 of Division 16.5 under all of the following conditions:

- If the vehicle is being driven in response to an emergency call or while engaged in rescue operations or is being used in the immediate pursuit of an actual or suspected violator of the law or is responding to, but not returning from, a fire alarm......21055(a).

California Codes (continued)

- If the driver of the vehicle sounds a siren as may be reasonably necessary and the vehicle displays a lighted red lamp visible from the front as a warning to other drivers and pedestrians.......21055(b).

21056 CVC

Section 21055 does not relieve the driver of a vehicle from the duty to drive with due regard for the safety of all persons using the highway, nor protect him from the consequences of an arbitrary exercise of the privileges granted in that section.

21057 CVC

Every law enforcement officer is hereby expressly prohibited from using a siren or red light or driving at an illegal speed when serving as an escort of any vehicle, except when the escort or conveyance is furnished for the preservation of life.

21806 CVC

Upon the immediate approach of an authorized emergency vehicle which is sounding a siren, and which has at least one lighted lamp exhibiting a red light that is visible, the driver of every other vehicle shall yield the right-of-way and shall immediately drive to the right-hand edge or curb of the highway and stop.

21807 CVC

Provisions of 21806 shall not operate to relieve the driver of an authorized emergency vehicle from the duty to drive with due regard for the safety of all persons and property.

22350 CVC

No person shall drive a vehicle upon a highway at a greater speed than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property.

California Codes (continued)

Section 165 California Vehicle Code defines an authorized emergency vehicle as any vehicle owned and operated by a governmental entity and used by employees in the performance of law enforcement duties or other emergency services.

Section 13519.8 California Penal Code provides standards for minimum guidelines to be used by law enforcement agencies in developing department policies and training related to the conduct of vehicular pursuit of known or suspected violators of the law (See Chapter 13 - Vehicle Pursuit Operations).

Section 669 of the Evidence Code can be applied to actions from driving a law enforcement vehicle. It identifies a need to exercise due care and may be used as a basis for a claim in civil (tort) litigation.

- The failure of a person to exercise due care is presumed if:
  - There is a violation of a statute, ordinance, or regulation of a public entity;
  - The violation proximately caused death or injury to person or property;
  - The death or injury resulted from an occurrence of the nature which the statute, ordinance, or regulation was designed to prevent; and
  - The person or persons suffering the death, or injury to that person or property was one of the class of persons for whose protection the statute, ordinance, or regulation was adopted.
- This presumption may be rebutted by proof that:
  - The person violating the statute, ordinance, or regulation did what might reasonably be expected of a person of ordinary prudence, acting under similar circumstances, who desired to comply with the law . . .

California Codes (continued)

The instructor should emphasize the importance of the student understanding the potential impact of Section 669. Not only must a peace officer know what the agency's policy states, that officer must be in compliance or acting reasonably otherwise, and the officer's actions are subject to examination at a later date by the courts. Presumption of failure to exercise due care increases the likelihood of being held personally liable in criminal and civil court. Many court decisions base the admission and weight of agency policy guidelines submitted into evidence on this statute. The courts have restricted law enforcement in driving situations due to the impact of case law, and an acknowledgment of an increased hazard to the public during vehicle operation.

669.1 Evidence Code Presumption or failure to exercise due care - violation of government rule, policy, manual, or guideline.

- "A rule, policy, manual, or guideline of state or local government setting forth standards of conduct or guidelines for its employment <u>shall</u> not be considered a statute, ordinance, or regulation of that public entity within the meaning of Section 669, <u>unless</u> the rule, manual, policy, or guideline has been formally adopted as a statute, as an ordinance or a local government entity in this state empowered to adopt ordinances, or as a regulation by an agency of the state pursuant to the Administrations Procedure Act or by an agency of the U.S. Government pursuant to the Federal Administrative Procedures Act."
- This section affects only the presumption set forth in Section 669 and is not otherwise intended to affect the admissibility or inadmissibility of the rule, policy, manual, or guideline under other provisions of law.

California Codes (continued)

Instructor discussion regarding these statutes should include that:

- Code-3 operation of an emergency vehicle introduces hazards that are not present during the normal operation of law enforcement vehicles.
- Speeds which may be considered as reasonable and prudent by the courts may be less than the posted speed limit, depending on weather and traffic conditions.
- If a law enforcement officer is involved in a collision while driving Code-3 and the siren was not being used, a subsequent investigation will probably disclose that use of the siren was required pursuant to Sections 21055 and 21806 CVC.
- Immunity from civil liability may only be available when the emergency vehicle is being operated while displaying a red light, the siren utilized when reasonable to do so, and then, only when the vehicle is being operated with due regard for the safety of all persons using the highway.
- During Code-3 operation, officers must allow their actions to be guided by sound professional judgment.
- The Vehicle Code is very specific as to the driving conduct of government employees operating an emergency vehicle under "ordinary" conditions (21052 CVC).
- Injuries sustained in a traffic collision are generally more severe than most other types of on-duty injuries. Approximately fifty percent of all on-duty law enforcement deaths are the result of vehicle collisions.

California Codes (continued)

- In cases where a law enforcement officer becomes involved in a traffic collision while operating a law enforcement vehicle and is acting within the scope of employment, both the agency and the officer may be financially liable for damages caused as the result of a traffic collision.

- It is important that law enforcement drivers fully understand the potential safety risks and legal liabilities involved in emergency driving, particularly in the following situations:

    - Safely clearing intersections requires stopping, if necessary, before entering and then proceeding and clearing the intersection lane-by-lane.

    - Passing other vehicles while operating Code-3 requires extreme caution, and consideration should always be given to the potential hazards of passing on the right. (Refer 21806/21807CVC)

- The physiological and psychological stresses involved in Code-3 operations require the constant attention of the law enforcement driver, particularly related to speed awareness and the potential for tunnel vision.

- Law enforcement vehicle emergency warning devices (lights and siren) are intended to warn other motorists of an approaching emergency vehicle. These warning devices require other motorists to yield the right-of-way, but do not guarantee that will occur. Law enforcement drivers must drive with consideration for these limitations.

California Case Law

Introduction

Case law decisions have as much impact on law enforcement behavior as legislated laws. The difficulty for all members of law enforcement is to keep abreast of changes in interpretation, and to properly relate those decisions to other situations where similarities exist. Case law, in driving situations especially Code-3 operation, has traditionally been more restrictive of law enforcement due to the potential threat to the safety of large numbers of the public. Following are some pertinent decisions worthy of consideration.

PETERSON vs. CITY OF LONG BEACH/05-16-79 (24 Cal.3d 238; 155 Cal.Rptr. 360, 594 P2d 477

1. Summary of Case

In 1972 a Long Beach law enforcement officer responded to what was later determined to be an erroneous report of a burglary in progress and observed Peterson running from the (Peterson's) location. There was no articulation of evidence of a weapon and as Peterson fled, the officer shot and killed the "suspect." The family sued the law enforcement department and officer alleging the officer failed to comply with specific law enforcement department policy guidelines restricting use of deadly force. The policy limited use of deadly force to circumstances "only after all other means fail...in the necessary defense from death or serious injury of another person attacked...to effect an arrest, to prevent an escape, or to recapture an escapee when other means have failed, of an adult felony suspect when the officer has reasonable cause to believe that (a) the crime for which this arrest is sought involved conduct including the use of or threatened use of deadly force <u>and</u> (b) there is a substantial risk that the person whose arrest is sought will cause death or serious bodily harm if apprehension is delayed" (emphasis in original). The original trial court held that the officer acted within the existing state law (197 PC) and found for the officer and city.

PETERSON vs. CITY OF LONG BEACH (continued)

Instructor's Note:
The Peterson case is used here because of its reference to current laws in effect (669 Evid.C). There have been similar case law decisions specifically involving vehicle operation based on failure to comply with department "rules" (Torres vs. City of Los Angeles/06-21-62, 58 C2d.35; 22 Cal.Rptr. 866, 372 P.2d 906) and non-compliance with "training bulletins" (Dillenbeck vs. City of Los Angeles/10-28-68, 69 C2d.472; 72 Cal.Rptr. 321, 446 P.2d 129). These cases are frequently cited because laws now in effect are similar to those superseded laws originally considered.

2. Case Law Decision

The California Supreme Court (4 to 3) reversed the trial court stating that while the officer acted within the general definition of Penal Code Section 197 (Criminal Liability), the central issue of civil liability dealt with the officer's failure to comply with the more restrictive policy guidelines on use of deadly force. The guidelines were held to be inclusive within the requirements of Section 669 of the Evidence Code (enacted 1967). Section 669 Evid. C. held that "the failure of a person to exercise due care is presumed if...he violated a statute, Ordinance, or regulation of a public entity...". The officer and his department were held civilly liable in this incident.

3. Impact on Law Enforcement

Although this is not a driving case, it impacts law enforcement conduct in future incidents where there is a failure to act within the more restrictive guidelines of department policy vs. state law. If a peace officer is acting within state law requirements but not within specific policy regulations, that officer may be judged civilly liable, as to be determined by 669 Evid.C. and the specifics of the particular incident.

BRUMMETT vs. COUNTY OF SACRAMENTO/08-24-78 (21 Cal.3d 880; 148 Cal.Rptr.361, 582 P2d 952

1. Summary of Case

Two sheriff's deputies were engaged in a high-speed pursuit of a bank robbery suspect. Within an intersection, both deputies' vehicles struck another vehicle and one of the two patrol cars careened into a vehicle stopped in a left turn lane. The deputies' own testimony in the civil trial that ensued revealed the following:

BRUMMETT vs. COUNTY OF SACRAMENTO (continued)

Although uncertain of his speed, one deputy doubted he was exceeding 80 mph, but his speed was so excessive that effective evasive maneuvers were not possible, and he was unaware of the color of the light when he entered the intersection; the other deputy thought he was going 90 miles per hour at the highest rate of speed during the pursuit, that he did not step on his brakes at all, even though other vehicles were in the intersection, and he acknowledged that law enforcement practices advised "if there is a problem" with chasing a suspected felon, the officers were to cease pursuit, and that he understood this to refer to traffic conditions. The trial court held that pursuant to 17004 CVC the deputies were not personally civilly liable while in pursuit of a felony suspect. The county also was held not liable pursuant to Section 815.2 Government Code which stated "except as otherwise provided by a statute, a public entity is not liable for an injury resulting from an act or omission of an employee of the public entity where the employee is immune from liability."

2. Case Law Decision

The California Supreme Court unanimously reversed the trial court decision on liability of the county and upheld the immunity of the deputies. The specifics of 815.2 Government Code states "Except as otherwise provided by statute" and the Supreme Court held that Section 17001 CVC removes any immunity from the public entity for negligence of its employees. The key in this case for county liability is whether the deputies were acting within the confines of 21056 CVC. However, the physical evidence and testimony of the deputies themselves showed a negligence on their part for the safety of others.

BRUMMETT vs. COUNTY OF SACRAMENTO (continued)

3. Impact on Law Enforcement

Due to the presence of potential civil liability to local and state government, there has been an increase in restrictive guidelines (policy) to reduce the number of incidents where lawsuits will follow. Individual officers should not rule out the potential for personal liability if gross violations of Section 21056 CVC occur. It is also important to follow the requirements of 21055(a) and (b) CVC and roll Code-3 to protect themselves when they violate the "rules of the road."
This case involved the direct operation of a motor vehicle by an officer who became involved in an accident.

DUARTE vs. CITY OF SAN JOSE/01-02-80 (1000 Cal.App. 3d 648; 161 Cal.Rptr.140)

1. Summary of Case

In 1975, a San Jose law enforcement officer arrested a suspected drunk driver. The suspect was handcuffed and placed in the rear seat of the patrol car. The suspect, who had been cooperative and "all but incapacitated by intoxication," complained of discomfort due to the handcuffs, and the officer removed them. The suspect was left "locked" in the rear area of the parked vehicle (with keys in the ignition and engine apparently running) while the officer assisted another officer in moving the suspect's vehicle. The suspect unlocked the rear door, exited, and re-entered into the front seat and drove off. Two other law enforcement vehicles pursued the suspect at speeds up to 65 mph until they briefly lost sight of him. The suspect exited the roadway and struck and seriously injured a man who was mowing his lawn. The city claimed immunity under 815.2 and 845.8 of the Government Code (the latter provides immunity for a public entity when a person in custody/detention escapes and injures a third person in that escape). The trial court held for the city and its officers.

DUARTE vs. CITY OF SAN JOSE (continued)

2. Case Law Decision

The California Court of Appeals held unanimously (3-0) that the officers were immune under 845.8 Government Code but that the city should be held liable under 17001 CVC Negligent vehicle operation by a public entity's employee was held to encompass allowing the circumstances to exist (vehicle unattended, motor running) for the suspect to use the patrol car to flee.

3. Impact on Law Enforcement

Again, there was no personal liability to the officers, but the court is sending a clear message to public entities that it will hold them liable for negligence on the part of employees. Specific policy guidelines are the likely result as agencies attempt to clearly define proper and improper behavior, hoping to limit lawsuits. The more specific the policy guidelines become, the easier it may become for others to show non-compliance by an employee, thus not "exercising due care" (negligence) as per 669 Evid. Code. This case, while not involving the direct operation of a vehicle by an officer, resulted in the ability of a suspect to become involved in a traffic accident.

GRANT vs. PETRONELLA/07-30-75 (50C.A.3d 281; 123 Cal.Rptr. 399)

1. Summary of Case

In 1971, a deputy sheriff (defendant) was responding on the freeway to an emergency, at a rate of speed higher than the posted speed limit, and collided with a vehicle (plaintiff's) that was traveling in the same direction in front of him. The emergency vehicle was in the innermost lane, and as the deputy attempted to swerve to the left, his vehicle's right front bumper struck the left rear or left door of the other vehicle. There was a dispute as to whether the other vehicle was already in the number one lane or changed lanes just prior to the collision. The deputy was not utilizing the vehicle's

GRANT vs. PETRONELLA (continued)

emergency red lights or its siren, and an argument was given that doing so "is not a safe procedure" on a freeway. The plaintiff argued that if an emergency vehicle is not Code-3 (21055 CVC), then it must comply with the same rules of the road as all other vehicles. The defendant argued that the emergency situation should be given consideration as to the justification for the deputy's driving in violation of specific Vehicle Code section(s) and requested that the appropriate jury instruction (BAJI 5.80) be given the jury. The trial court failed to advise the jury of the substance of 21055 CVC, and gave the BAJI 5.80 instruction. A judgment was made for the defendant and the plaintiff appealed.

2. Case Law Decision

The Court of Appeals unanimously overturned the trial court's decision due to the actions of the court in failing to provide information to the jury on 21055 CVC and giving the BAJI 5.80 instruction. Due to the fact the "emergency vehicle" was not in compliance with 21055 CVC and Code-3, it was not exempt from the rules of the road and its driver was therefore required to comply with the same laws as other drivers. Additionally, by not being Code-3, the jury should not consider the nature of the emergency as to why the vehicle was being driven in the manner it was.

3. Impact on Law Enforcement

If an officer is involved in emergency driving, the officer must comply with 21055 CVC and utilize the law enforcement vehicle emergency lights and siren - as reasonably necessary. If the officer is in compliance with 21055 CVC, then violations of the Vehicle Code do not necessarily determine negligence, and the test is weighed against 21056 CVC and the "reasonable" actions of the officer.

STARK vs. CITY OF LOS ANGELES/05-16-85
(168 Cal. App. 3d 276;
214 Cal. Rptr. 216)

1. Summary of Case

Los Angeles law enforcement officers observed a suspicious person in a vehicle who was violating the Vehicle Code. As the officers followed in their marked vehicle, the suspect picked up speed and as the officers' vehicle was held up in traffic, the suspect made a squealing left turn," apparently attempting to flee". As the patrol car turned left, the officers observed the suspect run a stop signed intersection at approximately 55 mph, drive through a yield signed intersection, and another stop signed intersection. The officers were approximately 500-600 feet behind, and although following, had not yet activated red lights and siren. At this point, the officers were preparing to initiate a Code-3 pursuit when they observed the suspect vehicle enter another intersection and broadside the plaintiff's vehicle. The trial court found that the city was not immune under 845.8 Government Code, and liable under 17001 CVC due to the failure of the officers to initiate their siren to warn other motorists ahead. The court felt the officers, by their actions, were in pursuit of the suspect. The city appealed the verdict.

2. Case Law Decision

The court of appeals unanimously affirmed the trial court on all points (3-0). While the officers were not personally liable, the public entity was held accountable for injury to a third person.

3. Impact on Law Enforcement

Providing an attempt to warn other motorists will be deemed reasonable and lessen the impact of potential lawsuits for not providing any warning at all. The court is willing to interpret what constitutes a "pursuit" when the "following" begins to violate Vehicle Code statutes.

Book Of Approved Jury Instructions (BAJI)

The following information is given as part of the instructions by the court to a jury with regard to emergency driving situations. Under some circumstances some of these instructions which could be beneficial to law enforcement's case cannot be given due to actions or omissions by officers. The specific instruction(s) given will be determined by the specifics of the individual case.

"Authorized Emergency Vehicle Exemption" (BAJI 5.80):

- It is the duty of the driver of an authorized emergency vehicle to exercise that amount of care which, under all the circumstances, would not impose upon others an unreasonable risk of harm. That standard of conduct which is reasonable under all the circumstances must, of course, take into consideration the unusual circumstances confronting the driver of an authorized emergency vehicle - that is, the emergency which necessitates immediate action and the duty imposed upon the driver to take reasonable and necessary measures to alleviate the emergency. The question to be asked is, "What would a reasonable, prudent emergency driver do under all of the circumstances, including that of the emergency?"
- The California Vehicle Code provides that the driver of an authorized emergency vehicle is exempt from and need not observe the provisions of the Vehicle Code under the following conditions:
  - The vehicle is being driven in response to an emergency call or while engaged in rescue operations or is being used in the immediate pursuit of an actual or suspected violator of the law or is responding to a fire or fire alarm, (except that fire department vehicles are exempt whether directly responding to an emergency call or operated from one place to another as rendered

Book Of Approved Jury Instructions (BAJI) (continued)

desirable or necessary by reason of an emergency call and operated to the scene of the emergency or operated from one fire station to another or to some other location by reason of the emergency call); and

- If the driver of the vehicle sounds a siren as may be reasonably necessary and the vehicle displays a lighted red lamp visible from the front as a warning to the other drivers and pedestrians.

- When the foregoing requirements are met, then it is not negligence as a matter of law for the driver of the authorized emergency vehicle to fail to observe those provisions of the Vehicle Code from which the driver is exempt. This exemption, however, does not relieve the driver of such vehicle from the duty of drive with due regard for the safety of all persons using the highway, nor does it protect the driver from the consequences of an arbitrary exercise of the privileges granted under the exemption.

- An arbitrary exercise of the privileges granted means an act performed either with knowledge that serious injury to another will probably result, or with wanton and reckless disregard of the possible consequences. (It has been established in this case that the vehicle operated by the defendant (driver) was an authorized emergency vehicle).

"Test of an Emergency" (BAJI 5.81):

In determining whether an emergency vehicle was being driven in response to an emergency call, the test is not whether an emergency in actual fact existed, but rather whether the driver had received a report or a request or was informed of circumstances that would reasonably justify the belief that an emergency existed to which the driver was required to respond in the line of duty.

Book Of Approved Jury Instructions (BAJI) (continued)

"Duty to Anticipate Criminal Conduct of Third Person" (BAJI 3.13.1):

When the circumstances are such that the possibility of harm caused by the criminal conduct of a third person is, or in the exercise of due care should be, reasonably foreseeable, it is negligence to fail to use reasonable care to prevent such criminal act from causing (injury) (damage).

"Negligence Per Se-Violation of Statute, Ordinance, or Safety Order" (BAJI 3.45):

If you find that a party to this action violated ________, the (statute) (ordinance) (safety order) just read to you (and that such violation was a (proximate) (legal) cause of injury to another or to himself), you will find that such violation was negligence (unless such party proves by a preponderance of the evidence that he did what might reasonably be expected of a person of ordinary prudence acting under similar circumstances, who desired to comply with the law. In order to sustain such burden of proof, such party must prove by a preponderance of the evidence that he was faced with circumstances which prevented compliance or justified noncompliance with the (statute) (ordinance) (safety order)).

"Duty of the Driver of Vehicle on Public Highway" (BAJI 5.00):

It is the duty of the driver of any vehicle using a public street or highway to exercise ordinary care at all times to avoid placing the driver or others in danger; (and) to use like care to avoid an accident; (to keep a proper lookout for traffic and other conditions to be reasonably anticipated) (and) (to maintain a proper control of the vehicle).

Book Of Approved Jury Instructions (BAJI) (continued)

"Basic Speed Law" (BAJI 5.30):

The speed at which a vehicle travels upon a highway (not in excess of _______ miles per hour), considered as an isolated fact and simply in terms of so many miles an hour, is not proof either of negligence or of the exercise of ordinary care.

Whether that rate of speed is a negligent one is a question of fact, the answer to which depends on all the surrounding circumstances.

The basic speed law of this state (as provided by Section 22350 of our Vehicle Code,) is as follows:

> " No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property."
>
> A violation of this basic rule is negligence.

Federal Case Law

Introduction

Law enforcement is required to operate in a dynamic environment of case law decisions. As the courts decide what is proper and improper conduct, it is our responsibility to adapt our policies and training to meet those interpretations. Section 17004.7 of the California Vehicle Code provides civil immunity, under certain conditions, to public entities during pursuits - specifically where the actions of fleeing suspects have caused third party injury or death.

The initial response by plaintiffs' attorneys to this immunity protection was to seek a detailed critique of the actions of law enforcement personnel in each pursuit, and attempt to show a

Federal Case Law (continued)

noncompliance with the policy. In **Kishida v. State of California** and **Weiner v. City of San Diego**, the state appellate courts ruled that if an agency's policy is ruled compliant with certain standards cited in the law, the immunity exists. In **Montes v. United States** the federal courts upheld the protections of the California law to federal law enforcement agencies whose policies met those standards. No further review of officer actions was required under case law.

The obvious next step for plaintiffs' attorneys was to attack the individual policy of the agency for being noncompliant with the minimum standards of Section 17004.7. In **Colvin v. City of Gardena**, a police department policy was ruled lacking in guidelines for initiating and discontinuing vehicular pursuits, and failing to provide procedures for designating the primary unit and the number of participating vehicles. The court felt that too much was left to individual officer discretion. This resulted in more specific guidelines or factors for consideration being established in policies. This ruling allowed the plaintiff's case to be tried in court at a later date, without the automatic immunity guarantee provided by Section 17004.7.

The state courts began granting immunity to law enforcement agencies whose policies met the court review process as to compliance with Section 17004.7. Agencies have adopted policies that have become more and more standardized. Plaintiffs' attorneys have subsequently turned to the federal court system for compensation, since the immunity provided by Section 17004.7 CVC does not apply under federal law. In federal court a plaintiff must prove a constitutional violation, primarily of the Fourth and Fourteenth Amendments in pursuit driving situations. The Federal Civil Rights Act (Title 42, U.S. Code, Section 1983) provides an avenue for these plaintiff actions. Some case law decisions that have an impact on law

Federal Case Law (continued)

enforcement vehicle operations are not driving related. That does not minimize the importance of the judicial opinion and its influence on the driving policy we establish, and the manner in which we conduct ourselves on the job while behind the wheel.

Refer: Kishida v. State of California, 229 Cal.App.3d 329, 280 Cal.Rptr. 62 (1991)
Weiner v. City of San Diego, 229 Cal.App.3d 1203, 280 Cal.Rptr.818 (1991)
Montes v. United States of America, 778 F.Supp. 19 (S.D.Cal. 1991)
Colvin v. City of Gardena, 11 Cal.App. 4th 1270, 15 Cal. Rptr. 2d 234 (1992)

MONELL vs. NEW YORK CITY DEPARTMENT OF SOCIAL SERVICES, 436 U.S. 658, 98 S.Ct. 2018 (1978)

1. Summary of Case

Female employees of the City of New York sued their respective agencies alleging an official policy compelling pregnant employees to take unpaid leaves of absence before such leaves were required for medical reasons. The principal question at issue was whether the "Federal Civil Rights Act" (Title 42, U.S.Code, Section 1983) is applicable to governmental entities as "individuals," so that a lawsuit could go forward.

2. Case Law Decision

The Supreme Court concluded that it was the intent of Congress to include local government agencies in the definition of "person" under Section 1983. They could not be granted the federal immunity provided to the state government. That allowed these entities to be sued directly for monetary, injunctive, and declaratory relief where their allegedly unconstitutional conduct

MONELL vs. NEW YORK CITY DEPARTMENT OF SOCIAL SERVICES, 436 U.S. 658, 98 S.Ct. 2018 (1978)

"implements or executes a policy statement, ordinance, regulation or decision officially promulgated by that body's officers." The Court also ruled that a lawsuit could occur against unofficial policy or custom, even if it has not received formal approval. Prior to this case, a plaintiff could not sue a public entity or agency in Section 1983 cases.

3. Impact on Law Enforcement

The number of lawsuits against local government entities increased tremendously where "policies, customs or practices" could be viewed as violating Constitutional guarantees. Policy makers are now more likely to write guidelines that are more clearly understood by their employees, with the expectation that there will be more compliance. With more specific language comes accountability and a potentially stricter interpretation by the courts. Training is likely to be held accountable for properly preparing employees to follow the rules in their daily duties.

TENNESSEE vs. GARNER, 105 S.Ct. 1694, 471 U.S. 1, 85 L.Ed.2d 1, 53 USLW 4410 (1985)

1. Summary of Case

Memphis officers responded to a report of a nighttime residential burglary. An officer observed and chased a fleeing 15-year-old suspect through the rear yard. The officer could not articulate any concern that the suspect was armed or provided an immediate threat to the officer or others. The apparent sole purpose of his use of a firearm against the suspect was to prevent escape, which was permitted at that time under Tennessee law. The suspect was shot and killed, and no state charges were filed against the officer. The suspect's father brought a wrongful death action, under the federal civil rights statute, against the officer and his department. He alleged that the force used was excessive and in violation of the suspect's right to be free from unreasonable seizures under the Fourth Amendment.

TENNESSEE vs. GARNER (continued)

2. Case Law Decision

In a split decision, the Supreme Court ruled that the application of the Tennessee law was unconstitutional and that the officer unreasonably "seized" the suspect through the use of deadly force. The old English Common Law interpretation justifying the use of deadly force on fleeing felons was viewed as too strict in current times, given the fact that not all felonies today are capital crimes as they were hundreds of years ago. Additionally, the Court cited the fact that, in practice, many police agencies required a stricter standard for use of deadly force (the capability and opportunity to seriously harm) than most state laws. A factor which weighed heavily in this case involved the lack of articulated justification by the officer to stop the suspect from fleeing by use of deadly force. The sole reason of preventing escape was ruled not sufficient. There was no reasonable evidence that this was anything other than a property crime, not a violent crime.

3. Impact on Law Enforcement

Although this is not a driving case, it is cited repeatedly in situations where deadly force, or its equivalent, is used. During the vehicular pursuit of a fleeing suspect, an officer must consider the nature of the crime and the threat the suspect presents to the public when deciding what tactics will be employed. The use of firearms, ramming, etc. to stop the suspect should only occur in cases where deadly force would be reasonable and justified. The mere fact that the crime is a felony may not be sufficient to justify an action or tactic that is subsequently deemed by the court to be the equivalent of deadly force. As stated in this decision, "whenever an officer restrains the freedom of a person to walk away, he has seized that person. It is plain that reasonableness depends on not only when a seizure is made, but also how it is carried out."

BROWER vs. INYO COUNTY, 489 U.S. 593, 109 S.Ct. 1378 (1989)

1. Summary of Case

In 1984, a deputy sheriff was pursuing a grand theft auto suspect at night in a rural area at high speed. After about twenty miles, the deputy requested a roadblock to stop the suspect. An assisting unit established a roadblock positioning a tractor trailer across the roadway on the backside of a curve. The assisting deputy also positioned his unit near the curve and used his vehicle spotlight in such a manner that it blinded the suspect's view of the roadblock. The suspect was killed in the subsequent collision with the trailer that was blocking the roadway.

2. Case Law Decision

The Supreme Court stated that, in this case, the use of a "deadman's roadblock" was deemed a violation of the suspect's Fourth Amendment rights particularly because it was intentionally applied. There was no opportunity for the suspect to do anything but crash, given specific actions of the deputy at the roadblock. This ruling was also influenced by **Tennessee v. Garner**.

3. Impact on Law Enforcement

This ruling makes a strong statement about the potential for specific driving actions being deemed a violation of a suspect's Fourth Amendment right to be protected from unreasonable seizure. Tactics which are reasonably likely to cause serious injury or death to a suspect will be scrutinized in the future. This case ruled that seizure may be applied where a pursuit results in a "termination of freedom of movement through means intentionally applied." The criteria stated in **Tennessee v. Garner** (using deadly force only when the nature of the crime and the potential threat to public safety caused by the suspect can be articulated) will be influential in

BROWER vs. INYO COUNTY (continued)

any decision of the court. It is not likely that the court will permit certain tactics on suspects wanted for minor offenses. Actions taken by law enforcement likely to produce the same result as the use of firearms should only be utilized in situations where deadly force would be justified and reasonable.

Note: The driving tactic commonly known as "Pursuit Intervention Technique (PIT)" is **not** the same as "ramming." When applied as trained, it has been demonstrated that PIT is relatively safe. Its use, like any other form of "legal intervention," carries potentially increased liability because it is initiated by law enforcement. Guidelines for its use, as in any offensive tactic, should be carefully prepared and adequately trained prior to use. Many departments have placed PIT and road spikes in a separate category from other forms of legal intervention in their policies, and do not categorize these tactics as using deadly force. The key to this issue: is a certain tactic allowed per policy, and **how and when** is the tactic applied?

CANTON vs. HARRIS, 489 US 378, 103 L. Ed. 412, 109 S. Ct. 1197 (1989)

1. Summary of Case

The plaintiff was arrested by officers and taken to the department lockup. The plaintiff was incoherent and fell to the floor. She was allowed to remain on the floor so that she would not fall again and no medical aid was summoned. The Watch Commander had sole responsibility for determining whether an inmate should receive medical attention. Watch Commanders receive no special training, other than basic first aid, to evaluate inmates in custody who might require medical care. Upon release, the plaintiff was taken by her family to a hospital where she was admitted for one week for severe emotional ailments. She required a year of outpatient care.

CANTON vs. HARRIS (continued)

2. Case Law Decision

The Supreme Court held that a municipality or its agencies may be subject to civil rights liability if it can be demonstrated that a constitutional violation occurred as a result of its policy (or lack of policy). In this case, the matter involved a lack of training for Watch Commanders. It was determined that there was a "reasonable expectation" that Watch Commanders would be faced with situations where inmates in their custody would require medical care. The court ruled that if it reasonably expected that a Watch Commander would be required to evaluate the medical needs of persons in their care, there should be some form of training provided them to aid in their evaluation. Inadequacy of police training may serve as a basis for civil rights liability only where the failure to train amounts to "deliberate indifference" to the rights of persons with whom the police come into contact. Deliberate indifference is generally described as when action is not taken in face of a strong likelihood, rather than a mere possibility, that failure to provide action will result in harm. It generally requires some level of conscious indifference. If the need for different training (than normally received) is so obvious that violations of constitutional rights are likely, then the policy makers can reasonably be said to have been "deliberately indifferent' to that need. It is the adequacy of the program that is key, not the shortcomings that may result from the actions of an individual that is negligent. The plaintiff must prove the deficiency of the training program actually caused the police officer's indifference to the constitutional rights of the plaintiff. The court cited, as an example, the issue of a law enforcement agency arming its officers with firearms, and the likelihood that those officers would be called upon at some time to attempt to arrest persons who flee from them. The constitutional guarantees secured under such case law as **Tennessee v. Garner** will be expected to be

CANTON vs. HARRIS (continued)

taught to officers who are likely to be faced with fleeing suspects who fail to heed warnings to stop. The need for such training is "so obvious" that failure to do so could properly be characterized as "deliberate indifference." The same argument could easily be made in pursuit situations regarding law enforcement's choice of actions to take against suspects fleeing in a vehicle. A second method of municipal liability for failure to train is where it is shown that the policy makers were aware of and acquiesced in a pattern of constitutional violations involved in the exercise of police discretion. Such a pattern would put the municipality on notice that its officers confront a peculiar situation on a regular basis and that they often react in a manner contrary to constitutional requirements. This would amount to "deliberate indifference" or tacit authorization.

3. Impact on Law Enforcement

The need for training law enforcement personnel in the proper operation of law enforcement vehicles in an effort to provide enhanced public safety is very obvious. POST minimum guidelines and state legislation (e.g., 13519.8 P.C.) require certain training to occur. Updating training, and keeping it responsive to the needs of society is a method of assuring adequacy. All training should be periodically reviewed and critiqued as to its validity and relevance. If and when a driving tactic is added to an agency's accepted field procedures, it should be adequately trained. That is particularly important when the action can impact safety, whether it is for the public, the officer, or the suspect.

LEWIS vs. SACRAMENTO COUNTY (At time of printing: 96-1337, May 26, 1998)

1. Summary of Case

A deputy sheriff observed two juveniles on a motorcycle at the scene of a fight call that had been handled. The juveniles had driven up on the location at high speed not wearing helmets. They were not involved in the original disturbance. The deputy saw a city police vehicle's overhead lights come on, and the city officer yell something at the juveniles, but the deputy could not hear what was said because his windows were up. The city officer attempted to position his vehicle adjacent to the deputy's vehicle to prevent the two boys from leaving. They maneuvered slowly between the two patrol cars and sped off. The deputy initiated a pursuit, which lasted about seventy-five seconds, and covered 1.3 miles. Posted speed limits along the route were as low as 30 miles per hour. The average speed of the vehicles was later calculated at 60 miles per hour, with a high speed of approximately 100 miles per hour. The pursuit went through four stop lights and three ninety-degree turns. During the pursuit, two cars and a bicycle were forced to swerve off the roadway. It is estimated that the deputy's following distance was as little as 100-150 feet. After the suspects' motorcycle crested a hill, the operator attempted to make a left-hand turn and skidded to a halt. After the deputy's vehicle came over the hill at a high rate of speed, he attempted to stop when he saw the stopped motorcycle in his path. The passenger was struck and killed by the deputy's vehicle.

2. Case Law Decision

The Supreme Court accepted an appeal of the Court of Appeals decision in this matter "to resolve a conflict among the Circuits over the standard of culpability on the part of a law enforcement officer for violating substantive due process in a pursuit case." The court

LEWIS vs. SACRAMENTO COUNTY (continued)

established a necessary standard of "shocks the conscience," rather than "deliberate indifference" or "reckless disregard" to determine a violation of substantive due process under the Fourteenth Amendment. It further ruled that this standard had not been met in this incident. The Court stated that "a police officer does not violate substantive due process by causing death through deliberate or reckless indifference to life in a high speed automobile chase aimed at apprehending a suspected offender."

In addition, the Court found no violation of the Fourth Amendment related to search and seizure because "neither of which took place here." There was no argument as to a search, and the Court found no violation of seizure in this matter because the fleeing suspect's "freedom of movement" was not terminated "through means intentionally applied." The Court found no seizure "where a police officer accidentally struck and killed a fleeing motorcyclist during a high-speed pursuit."

The Supreme Court ruled that conduct deliberately intended to injure in some way unjustifiable by any government interest is the sort of official action most likely to rise to the conscience-shocking level." The Court expressed the concern that "in circumstances of a high-speed chase aimed at apprehending a suspected offender, where unforeseen circumstances demand an instant judgment on the part of an officer who feels the pulls of competing obligations, only a purpose to cause harm unrelated to the legitimate object of arrest will satisfy the shocks the conscience test."

The Court stated that the officer "was faced with a course of lawless behavior for which the police were not to blame . . . had nothing to cause [the suspect's] high-speed driving in the first place, nothing to excuse his

LEWIS vs. SACRAMENTO COUNTY (continued)

flouting of the commonly understood police authority to control traffic, and nothing (beyond a refusal to call off the chase) to encourage him to race through traffic at breakneck speed."

The Court recognized that "like prison officials facing a riot, the police on an occasion calling for fast action have obligations that tend to tug against each other. Their duty is to restore and maintain lawful order, while not exacerbating disorder more than necessary to do their jobs. They are supposed to act decisively and to show restraint at the same moment, and their decisions have to be made in haste, under pressure, and frequently without the luxury of a second chance. Police officers are often forced to make split-second judgments in circumstances that are tense, uncertain, and rapidly evolving.

A police officer deciding whether to give chase must balance on one hand the need to stop a suspect and show that flight from the law is no way to freedom, and, on the other, the high-speed threat to everyone within stopping range, be they suspects, their passengers, other drivers, or bystanders."

The Court declined to rule on the potential liability of the County under state law, instead dismissing the . . . claims against the County without prejudice to refiling in state court. It further found "no genuine factual dispute as to whether the County adequately trains its officers in the conduct of vehicular pursuits or whether the pursuit policy of the Sheriff's Department evinces deliberate indifference to the constitutional rights of the public."

3. Impact on Law Enforcement

A standard of "shocks the conscience" has been set as to a violation of constitutional guarantees of suspect rights

LEWIS vs. SACRAMENTO COUNTY (continued)

under the Fourteenth Amendment. The primary consideration has been established requiring an "intentional act" to harm a suspect, or maliciously deprive that suspect of due process rights.

This ruling addresses issues related to civil claims involving fleeing suspects. The Court made it very clear "prudence would have repressed the reaction" to give chase under the circumstances of this case. The issue of balancing the need to show that using a vehicle to avoid arrest is no way escape justice versus the safety concerns that continuing to chase present was recognized by the Court.

Emphasis should be clearly stated in law enforcement pursuit training to continuously evaluate the "balance test" from moment to moment during the conduct of a pursuit. Safety and compliance with state laws and agency policy should continue to be the priorities in training and pursuit operation.

Agency Policies and Procedures

Agency driving policies must adhere to the California Vehicle and Evidence Codes as noted in this chapter. These regulations may be more stringent than statute law and may increase the risk of civil liability.

EVOC instructors should be familiar with various agency pursuit policies and ensure that students acknowledge their need to understand their agency pursuit policy and emergency driving procedures.

notes

Chapter Twelve

emergency driving operations

General Information

Emergency response (Code-3) driving frequently demands split-second timing and instant reactions. This type of driving requires planning ahead of time without wasting valuable moments with panic or indecision. When confronted with hazards such as traffic congestion, slow down and even stop if in doubt as to what other drivers may do. Speeds will depend on several variables and will ultimately be the decision of the individual officer.

Passing on the Right

Section 21806 CVC requires traffic to immediately pull to the right edge of the roadway and stop in response to the red light and siren. A law enforcement emergency driver should give traffic a chance to respond to the emergency equipment and yield to the right hand side of the road. Passing traffic on the right when the emergency lights and siren are operating is extremely dangerous. This maneuver should be done with extreme caution and then only when no other alternative is available.

Driving Considerations

Caution and good driving ability are better than emergency lights and siren, but one must consider the limits as well as the advantages of the vehicle and its equipment.

Headlights/Emergency Lights

- During daytime hours, low beam headlights should be used in conjunction with the emergency lights.

Driving Considerations (continued)

- Headlights are more discernible than the emergency lights.
    - Red lights are not always visible.
    - Blue lights may be difficult to see.
    - Most people will see the headlights before they hear the siren.
- Most emergency vehicles are equipped with alternating headlights.
- High-beam lights will have a tendency to obliterate (wash out) the emergency lights and blind oncoming drivers. (Nighttime)
- Spotlights should be utilized if possible, but not directed into the eyes of other motorists. A sweeping back and forth horizontal motion is recommended. (Nighttime)
- The use of auxiliary blue or amber lights in conjunction with an emergency red light is permissible under Vehicle Code Sections 25258(b) and 25259.
- Sirens are permissible for use under Vehicle Code Sections 30, 21055(b) and 27002.
- Remember, emergency lights and sirens are no substitute for caution and common sense driving habits.

Siren Audibility Factors

1. Weather Conditions

- The siren may be heard sooner on an overcast or cloudy day.
- Siren audibility tends to dissipate into the atmosphere on clear days when there is no inversion layer.

Siren Audibility Factors (continued)

- Fog will allow sound to "carry" through the moisture with a minimum loss of decibels at close range. But will "block" sound from traveling at longer distances.

2. **Traffic Conditions**

- The siren becomes less audible with the increase of traffic noises; i.e., horns honking, engine and exhaust noises, etc.
- Heavy truck or bus traffic will decrease the effectiveness of the siren.

3. **Location**

- The siren may be less audible in a residential area than in a business district. Trees and shrubbery tend to absorb the sound.
- Tall buildings may block, deflect, or funnel its audibility.
- In flat, open areas, i.e., desert, the sound of a siren can usually be heard for a greater distance.

4. **Driver Impairments**

- Impairments
  - Driver under the influence
  - Physical or medical problems
- Distractions inside the vehicle:
  - Children
  - Passengers talking to the driver
  - Radio, stereo, or cellular phones
  - Air conditioning, heater fan, etc.

Siren Audibility Factors (continued)

- Windows rolled up and radio "on"

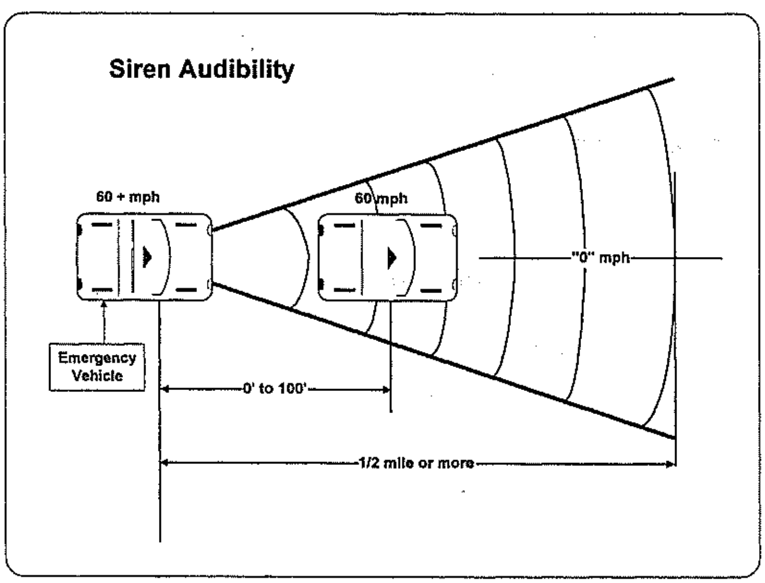
- Distractions outside of vehicle:
  - Construction work
  - Law enforcement incident on street
  - Sight-seeing

- Unpredictable reactions of driver
  - Panic stop in the lane of traffic
  - A sudden movement, left or right

5. Speed

- As speed increases, the effectiveness of the siren decreases.

- Due to the increase of speed and the resultant increase of feet per second traveled by the emergency vehicle, other drivers and pedestrians may not have sufficient time to react to the sound of the siren.



- When an emergency vehicle is about to overtake and pass another vehicle traveling at 60 mph or faster, the driver of that vehicle cannot hear the siren until the emergency vehicle is within 100 feet of passing the vehicle.

Driving Tactics

1. Siren Syndrome

The most important factor in any Code-3 driving is the individual driver's calm demeanor and common sense in the application of proper driver techniques. Remember the siren may also affect the emergency driver. (Siren Syndrome)

- The adrenaline will be flowing, heart pounding - yet the driver must remain cool. Be aware of the fact that the excitement of the moment can adversely affect the driver's ability to concentrate and safely operate the vehicle.
- Tunnel vision may develop. Keep eyes moving to look for hazards.
- Speed reference may be lost due to the elimination of the sounds of speed (wind, engine noise), glance at speedometer when safe.
- Law enforcement drivers must remain calm despite the situation and drive with caution. Taking deep breaths can reduce symptoms.

2. Many serious law enforcement collisions occur at intersections.

- Slow down or stop before entering intersections; look in all directions, clear the intersection lane by lane.
- Approaching drivers cannot always see the emergency vehicle because of visual impairments such as buildings or vegetation.
- Observations of cross streets should start before entering the intersection. Depending upon the circumstances, consider reducing speed.

Driving Tactics (continued)

- By fluctuating the pitch or changing the pattern of the siren from wail to yelp and back, the chances of persons on the road hearing the siren are greatly increased.

3. **Pass on the left. Passing traffic on the right when the emergency lights and siren are operating is extremely dangerous. This maneuver should be done with extreme caution and then only when no other alternative is available.**

4. **When responding - plan the most desirable, safest route of travel.**

5. **When driving Code-3 - don't drive beyond the capabilities of the vehicle or self.**

6. **Use the radio - stay calm - let people know what is happening. Use in straight stretch, when possible.**

7. **If traffic does not yield, maintain a safe following distance until a motorist can see or hear emergency equipment and yield to the right.**

8. **If weather is bad or traffic is congested, response to an emergency should be at reduced speeds.**

9. **Driver should avoid using computer communications during emergency operations.**

10. **Be sure windows are rolled up when driving Code-3 to reduce noise levels within the vehicle to hear radio traffic and for others to understand your radio transmissions.**

Chapter Thirteen

vehicle pursuit operations

Law Enforcement Pursuits

- Pursuits are governed by all laws, policies, tactics and rules applicable to emergency (Code-3) responses.

- There are few situations in law enforcement operations that require a higher degree of common sense and sound judgment than sustained high-speed vehicular pursuits. Officers must effectively perform in an atmosphere where long-range consequences may hinge upon the soundness of split-second decisions.

- The immediate apprehension of the violator is never more important than the safety of officers and the public. When it becomes apparent that the immediacy of apprehension is outweighed by a clear and unreasonable danger to officers and the public, the pursuit should be abandoned.

- While engaged in a pursuit, officers are exempt from the rules of the road only if they are operating the vehicle Code-3. However, the law does not excuse or exempt an abuse or arbitrary exercise of this privilege, nor does it provide exemptions from criminal and civil liability when the vehicle is being driven without due regard for the safety of all persons using the highway (21056 CVC).

- The key to a successful conclusion of a pursuit is dependent upon proper self-discipline and sound professional judgment.

Section 13519.8 California Penal Code

1. **This legislation provides a set of uniform minimum guidelines related to policy and training for adoption by California law enforcement agencies regarding vehicular pursuits. Refer to POST pamphlet "California Law Enforcement Vehicle Pursuit Guidelines" for additional information.**

2. **EVOC instructors should be aware of the issues included in this law and include these elements in training related to pursuits.**

3. **Recruits and in-service personnel are required by law to receive training on these minimum guidelines, and it is recommended that additional issues pertinent to agency policy requirements be discussed in periodic update training. Consideration should be given to including classroom lecture and discussion, behind-the-wheel practical application, and/or other forms of "simulated" pursuit driving in these training programs.**

4. **Each element of this law is listed below, with discussion points and driving tactics included to aid the instructor in comprehensively preparing a course of instruction. Consideration should be given to the following Instructor's Note.**

Instructor's Note:
These guidelines are not intended to be a standard for any agency. Each agency should adopt and follow its own policy in accordance with existing law and the jurisdiction it serves.

Discussion Regarding the Specific Guidelines of 13519.8 PC

1. **When to Initiate a Pursuit**

   - Pursuits may be initiated when a law violator clearly exhibits an intention to avoid arrest by using a vehicle to flee. Provide a definition of a pursuit, refer to agency policy.

Discussion Regarding the Specific Guidelines of 13519.8 PC (continued)

- In order to diminish the likelihood of a pursuit, officers intending to stop a vehicle should, when possible, be within close proximity to the vehicle before attempting the stop.

- Officers initiating traffic stops must be aware of the presence and proximity of other motorists on the highway prior to utilizing emergency lights and siren (i.e., Is there a motorist ahead and to the left of the officer that may view the emergency lights and yield into the path of the officer?). When practicable, officers should close the distance between themselves and the violator's vehicle to minimize the likelihood of other vehicles swerving into their path.

- When possible, officers initiating a vehicle stop should attempt to select an area which provides optimal officer safety (e.g., wide roadway, high visibility to other motorists, minimal pedestrian activity, etc.).

- When circumstances indicate a high potential for a pursuit (e.g., felony wants, known or suspected stolen vehicles, etc.) officers should ascertain the availability of additional backup units (including an air unit) and should await their arrival, if possible, prior to initiating the vehicle stop.

- What is the known or suspected offense and what form of response should be given if the driver fails to yield (e.g., immediate termination, reasonable short distance termination, termination only when conditions become too dangerous)? The determining factor should be the "balance test", that is, does the seriousness of the crime warrant the level of threat to public safety caused by the pursuit?

Discussion Regarding the Specific Guidelines of 13519.8 PC (continued)

- What are the public safety issues present (e.g., vehicle and pedestrian traffic volume, weather/visibility/roadway conditions, proximity to schools, residences, or crowded business areas)?
- Are non-law enforcement passengers present in the officer's vehicle, and should a pursuit be initiated if the suspect vehicle fails to yield?
- What is a reasonable speed within the existing driving environment should a pursuit take place? A re-evaluation should take place as conditions change.
- What is the quality of radio communication?
- How familiar is the officer with the surrounding area?
- Officers should make an honest assessment of their own training and experience, and assess the capabilities and limitations of the vehicle they are driving before they initiate a pursuit.

2. The Number of Involved Law Enforcement Units and Their Responsibilities

- The initial pursuing officer (primary unit) and the appropriate number of backup officers per agency policy (secondary or assisting units) should be the only units actively involved in the pursuit.
- All other officers should stay clear of the pursuit and operate their vehicles in compliance with the rules of the road, but should remain alert to its progress and location, should suspect containment become necessary.
- Agency policy may dictate the addition or deletion of additional or substitute officers, and appropriate responsibilities.

Discussion Regarding the Specific Guidelines of 13519.8 PC (continued)

- Specialized units (e.g., unmarked/properly equipped law enforcement vehicles, motorcycles, and four-wheel drive vehicles) may have limited roles in a vehicular pursuit, refer to agency policy.

3. Communications

- An officer initiating a vehicular pursuit should immediately advise by radio in a calm clear voice that a pursuit is in progress.
- Appropriate concise information, per agency policy, should be provided in a timely manner. That information should include:
  - Unit identification.
  - Location, speed and direction of travel.
  - Specific reason for the pursuit, including known law violations.
  - Vehicle description, including license number, if known.
  - Number of occupants.
  - Traffic and weather conditions.
  - Any other pertinent information as it becomes available (e.g., contraband thrown from a vehicle, observed weapons, additional law violations).
- Secondary or assisting officers should restrict radio traffic to allow air time for the appropriate broadcasting officer to be monitored.

Discussion Regarding the Specific Guidelines of 13519.8 PC (continued)

- Agency policy may allow for a secondary unit (preferably a two-officer vehicle) to broadcast for the primary officer.
- If an air unit is on the scene, responsibility for broadcasting information may shift to that unit.
- Loss of all radio communication should be cause for termination of a pursuit due to concerns regarding officer safety and pursuit management.
- Agency policy may dictate specific responsibilities for desk and dispatch personnel during the conduct of a pursuit.
- Upon termination of a pursuit, an immediate advisement should be made by radio.
- When a suspect is placed into custody, and there is no need for additional response by other officers, an appropriate and immediate radio advisement should be made by an officer at the scene

4. Supervisory Responsibilities

- The responsibilities of specific supervisors should be known to all personnel. A supervisor need not be on the scene to exert appropriate control of a pursuit (e.g., designating by radio the addition or deletion of assisting units, termination of the pursuit by all units involved). If available, a supervisor should provide management control of a pursuit.
- A Watch Commander or designated officer may be, per agency policy, in overall command of all units involved in a vehicular pursuit.
- When practicable, an available supervisor should respond to the termination point of a vehicular pursuit, oversee post pursuit discipline and assert control when warranted. The supervisor's

Discussion Regarding the Specific Guidelines of 13519.8 PC (continued)

responsibility is to ensure compliance with all aspects of agency policy.

- Agency policy may dictate that a Field Supervisor or a Watch Commander terminate any vehicular pursuit when it is believed that policy is not being complied with, the threat to officer and public safety is too great, or that pertinent information is not being provided in a timely manner by the primary unit or designated assisting unit

5. Driving Tactics

- Agency policy may identify what specific types of driving tactics are authorized or prohibited.
- All officers involved in a vehicular pursuit should comply with agency policy regarding authorized or prohibited driving tactics.
- Training should emphasize the potential threats to officer and public safety involved in certain driving situations, such as Code-3 passing and the entering and clearing of intersections.
- The need to provide officer and public safety will always supersede the need to apprehend a fleeing suspect during a vehicular pursuit. Driving tactics employed should always assist in maintaining that goal.

6. Blocking, Ramming, Boxing in, and Roadblock Procedures

- Agency policy may specify certain offensive tactics or intervention techniques which can be employed to assist officers in successfully stopping the movement of a suspect vehicle. Intervention can be defined for the purposes of this document as the deliberate act by

Discussion Regarding the Specific Guidelines of 13519.8 PC (continued)

law enforcement to force the violator's vehicle to stop. This may include, but not be limited to, the use of Tire Deflation Devices (TDD, e.g., Spike Strips) or Pursuit Intervention Techniques (P.I.T.).

- Appropriate training should be provided to officers prior to the use of any offensive tactics.
- Officers should consider certain factors (e.g., nature of offense, threat to public safety in immediate area, road conditions, potential for suspect[s] to be armed - and type of weapons, etc.) prior to use of certain offensive tactics (e.g., PIT, ramming, roadblocks, spike strips).
- Generally speaking, offensive tactics should only be employed during vehicular pursuits involving suspects who represent a significant threat to public safety.
- Along with adequate training, proper communication and coordination during certain offensive tactics is a key factor in ensuring a successful and safe conclusion to their use.

7. Speed Considerations

- Agency policy may specify certain factors for consideration by officers during the conduct of a vehicular pursuit as to what is a reasonable speed. These factors may include:
  - Public and officer safety ("Balance test" - need to apprehend vs. threat to safety).
  - Nature of offense.
  - Duration of pursuit.
  - Pedestrian and vehicular traffic volume.

Discussion Regarding the Specific Guidelines of 13519.8 PC (continued)

  - Environment (rural, residential, business).
  - Familiarity with area.
  - Weather conditions and visibility.
  - Types of vehicles involved in pursuit.

- The primary consideration for an officer or supervisor regarding what is a safe speed is not necessarily the posted prima facie limit, it is: what is safe for the conditions present (22350 CVC).
- Pursuing officers should remember that they control their own speed, not the suspect.
- Officers should discontinue/terminate any pursuit immediately when their speed exceeds what is reasonable and safe for both them and the public.

8. Air Support

- The role of a helicopter or other form of air support during vehicular pursuits is to assist and coordinate the involved field units.
- The air unit should be responsible for monitoring and broadcasting pertinent pursuit information.
- If the circumstances of the pursuit indicate that apprehension of the suspect by pursuing officers appears unlikely (i.e., the suspect vehicle continuously increases distance from the ground units, or the suspect's vehicle is frequently out of sight of the ground units), or the suspect's actions indicate the ground units should back off, the primary unit or an appropriate supervisor may direct the air unit to continue to track or provide surveillance of the suspect vehicle.

Discussion Regarding the Specific Guidelines of 13519.8 PC (continued)

- Pursuing officers under such circumstances should then comply with any agency policy requirements regarding their continued effort.
- This may result in reducing the effort but continuing Code-3 operation; or,
- Discontinuing Code-3 operation (therefore complying with all "rules of the road") and reducing the effort to the point that they can no longer be seen by the suspect, but continuing to follow as directed by the air unit until the suspect stops.
- The primary purpose of these types of tactics is to reduce the potential danger to officers and the public on the highway.

- When the air unit is tracking or conducting surveillance of the suspect vehicle, concerned ground units should restrict their radio traffic to only information necessary to provide assistance.
- If a pursuit is terminated, the supervising officer may request the air unit to continue following the suspect after ground units have abandoned their pursuit.

9. Termination of a Pursuit

- The primary consideration in any vehicular pursuit is the safety of the officers involved and the public on or near the roadway.
- Officers involved in a vehicular pursuit should continually evaluate the necessity for continuing based upon the "balance test"; the need to apprehend versus the threat that the pursuit places on public safety.

Discussion Regarding the Specific Guidelines of 13519.8 PC (continued)

Instructor's Note:
EVOC instructors should emphasize the potential for the physiological effects of "siren syndrome". The influence of increased adrenaline and the potential for tunnel vision may interfere with the officer's ability to adequately respond to a situation or identify other potential hazards. This may include the ability to properly evaluate the need to terminate a pursuit.

- Officers must consider several factors in determining whether a vehicular pursuit should be continued. These factors are similar to those that should be considered at initiation, and in determining what is a reasonable speed (Refer to **"Initiation of a Pursuit"**, and **"Speed Considerations"**). The decision to terminate or abandon a vehicular pursuit may be based upon (but not limited to) the following:
  - When there is a clear and unreasonable danger to officers or other users of the highway ("due regard").
  - When the officer's or suspect's speed dangerously exceed the existing flow of traffic, or when pedestrian traffic necessitates dangerous maneuvering which is likely to exceed the performance capabilities of either vehicle or driver.
  - When there is no compelling need for immediate apprehension and the violator can be identified to the point where an arrest can be more safely made at a later time.
  - When the pursuit violates agency policy.
  - When appropriate and necessary emergency equipment or radio communication ceases to properly operate.
  - When an inter-jurisdictional situation requires termination per agency policy.
- When a pursuit is terminated, all units should discontinue Code-3 operation and obey all rules of the road.

Discussion Regarding the Specific Guidelines of 13519.8 PC (continued)

Instructor's Note:
EVOC instructors should emphasize the potential for the physiological effects of "siren syndrome". The ability to control one's emotions while driving in a vehicular pursuit, and during the subsequent arrest of the suspect are extremely important.

10. Capture of Suspect(s)

- Unless otherwise specified by agency policy, the apprehension of suspect(s) at the termination of a pursuit should be the responsibility of the initiating or primary unit.
- If more than one officer is in the primary unit, the senior officer (unless otherwise specified in agency policy) should have tactical control of the vehicle stop/arrest procedures.
- The timely radio advisement of suspect(s) being in custody is essential. Once that advisement is made, absent other circumstances, there is no reason for any additional units to respond to the termination point.

11. Interjurisdictional Considerations

- Vehicular pursuits are likely to enter more than one law enforcement agency jurisdiction. In an urban environment, that may involve the potential for several different agencies to become involved. Communications differences and limitations, as well as varied tactics and policy requirements, increase the likelihood for problems or risks to safety. Adherence to agency policy is a primary consideration for each officer involved.
- Notification by another jurisdiction of a pursuit in progress should not be construed as a request to join the pursuit. Upon receiving such information, law enforcement officers must verify if a request for assistance is being made, or if it is merely a notification for the purposes of awareness.

Discussion Regarding the Specific Guidelines of 13519.8 PC (continued)

- Law enforcement officers should not become involved in another agency's pursuit unless specifically authorized per agency policy and/or their own Watch Commander or Field Supervisor. Some agency policies may allow consideration for situations involving a lone unit from another jurisdiction, and the emergent nature of the situation that precludes the ability to ask for assistance. In this type of extreme and clearly demonstrable situation (e.g., shots being fired by suspect at the officer), it may be viewed as a request for immediate assistance for the purposes of officer safety.

- Agency policy may include consideration for desk personnel to notify field officers, the number of officers that will be permitted to respond, and the limitations upon all other field units.

- The primary unit involved in a pursuit should make a timely notification by radio when it appears a pursuit is about to enter another agencies jurisdiction. If and when a vehicular pursuit enters a neighboring law enforcement jurisdiction, appropriate notification should be made to that agency as required by agency policy.

- Agency policy may provide additional general or specific responsibilities for supervisors regarding the management of a vehicular pursuit that enters another jurisdiction.

- Agency policy may provide specific requirements for officers in the field who observe another agency's pursuit enter their own jurisdiction. This could include notification mandates as well as receiving supervisory approval before becoming involved.

Discussion Regarding the Specific Guidelines of 13519.8 PC (continued)

- Under circumstances where transfer of control of a vehicular pursuit from one jurisdiction to another is considered, agency policy may provide specific procedures to be followed. Factors which may influence this decision to relinquish control may include:
  - Familiarity with area.
  - Availability of sufficient personnel.
  - Loss or reduction in the quality of radio communication.
  - Vehicle related concerns (e.g., out of fuel, equipment breakdown).
  - Interagency agreement.
- Agency policy may specify procedures to be followed, and responsibilities for those personnel present at the termination point of an interjurisdictional vehicular pursuit. This may include issues related to responsibility for the arrest of the suspect(s).
- Agency policy may require specific post-pursuit reporting and review in interjurisdictional vehicular pursuits. Each agency involved may conduct their own review.
- Section 13519.8 PC recommends developing an interjurisdictional pursuit agreement that addresses the above considerations. Policies unique to a county or region may facilitate awareness by officers and supervisors of the pursuit procedures that may be used by other agencies.

Discussion Regarding the Specific Guidelines of 13519.8 PC (continued)

12. Reporting and Post-Pursuit Analysis

- The purpose of post-pursuit analysis is to assist in the overall management of vehicular pursuits, help develop and implement policy, and identify training needs. The desired goal is officer and public safety.

- Agency policy may designate the person(s) responsible for completing the pursuit report (CHP 187 form). Each agency may require an additional departmental report(s) be submitted for review.

- It is a good practice to engage in a post-pursuit debriefing as soon as reasonable after the incident. Agency policy may delegate that responsibility to a specific individual (e.g., senior officer, initiating officer, Field Supervisor, or Watch Commander). Issues of consideration may include:

  - Officer and public safety.
  - Compliance with agency policy.
  - Critique of tactics employed during the pursuit.
  - Communication and coordination concerns.
  - Issues related to the taking of the suspect into custody.
  - Recommendations for improving training or revising tactics.

notes

Chapter Fourteen

student driving skill development

Driving Exercises – Introduction

The following section is comprised of suggested lesson plans describing individual driving exercises for use within a driver training program. The lesson plans are comprehensive and enable instructors to efficiently adapt and instruct the exercises. Each instructor should be familiar with the POST Safety Guidelines for driver training as they apply to their individual programs.

Not all of the driving exercises need be incorporated into a specific program. The individual exercises are widely varied as to purpose, need and special requirements. A selection of exercises can be made to realistically conform to a program's goals and physical constraints, such as available driving area and time frames. Other exercises may be used in addition to these examples.

Many of the exercises can also be linked together to incorporate a series of exercises similar in purpose, to constitute a skill course operation.

The following points of information are offered to enable maximum benefit for lesson plan usage.

Lesson Plan Format

The format used is identical for all the presented exercises and incorporates:

- Materials needed - All items of equipment necessary to lay out and operate the exercise.

Lesson Plan Format (continued)

- Goal - The ultimate purpose and desired result achieved by utilizing the exercise.
- Objectives - Student benefits derived from the training.
- Introduction - A brief description of the exercise and its correlation to actual driving situations.
- Course description - A detailed representation of the exercise lay out, including all necessary linear dimensions and marking devices.
- Procedure to drive the course - Indicates all vehicular transitions through the exercise as well as the vehicle control techniques utilized.
- Demonstration phase - Describes the method employed to demonstrate the exercise to the student(s) as well as points of emphasis.
- Practical application - Indicates the procedure utilized for actual training application at the student driving level.
- Evaluation - Denotes the areas of performance by the student to be graded relative to each driving exercise.
- Diagram - A plot plan of the exercise to denote configuration, distances and placement of training aids such as cones, etc. The actual driving distances may necessarily vary because the dimensions of the type of training vehicle(s) used.

Training Speeds

Reference is often made within the lesson plans to the vehicle ultimately being driven at "training speeds." This is the vehicle's realistic operating speed for the performance of the exercise concerned. It will obviously be based on circumstances dictated by that exercise.

Training Speeds (continued)

In this regard, the instructor should consider:

- Purpose of the exercise.
- Vehicle limitations.
- Road and weather conditions.
- Student driver ability.
- Safety margin.

Student Evaluation

The student drivers will need to be graded on their ability to conform to the training objectives. This process should be thoroughly documented and may be objective, subjective, or both.

Timed Exercises

A time factor in negotiating various exercises should be considered for program operation. Depending on the exercise objectives, a time element can be useful for stress interjection and as a grading tool. Care should be used in the timing of a driving exercise, as it can often induce a sense of competition among the student drivers which may be detrimental to the performance objectives.

While stressed elsewhere within this manual, safety in driving exercises should always be a primary factor in program application. The inherent hazards present in moving vehicle situations should be considered in exercise selection, overall course layout and operating procedures.

Demonstration Techniques

1. General Information

- One of the primary areas of student instruction is the actual demonstration of the driving exercises by instructors.

Demonstration Techniques (continued)

- The demonstration is accomplished in one of the following three ways:
    - One instructor will verbalize the demonstration while another instructor drives the demonstration vehicle.
    - A single instructor will both drive and verbalize the demonstrations. The students will be passengers in the vehicle.
    - An instructor will only verbalize the demonstration to the assembled students.
- Verbalization only as a technique is the least desirable of the three methods, due to the lack of visual demonstration provided by the moving vehicle.

2. Methodology

- Dual instructor method. (One instructor verbalizes from outside the vehicle to the students while another instructor drives).
    - This is the most desirable of the demonstration techniques.
    - It is also the most complex, due to the coordination required between the instructors.
    - The students should be able to view the demonstrating vehicle and still hear the verbal instructions.
    - The verbalizing instructor actually controls the demonstration process.
    - The driving instructor will react/respond to the verbal direction or hand and arm signals of the other instructor.

Demonstration Techniques (continued)

- The demonstration is performed once at very slow speed, and again at "training speeds."
- During the slow speed process, the vehicle is stopped at predetermined points to allow time for verbal instructions to be given.
- The verbal instruction will identically correspond to the activity of the demonstrating vehicle.
- All points of vehicle placement and control techniques will be emphasized.

- Single instructor method. (One instructor will verbalize while driving.)
    - This particular method works well in exercises that involve long distances and it is impractical for the students to follow the demonstrating vehicle.
    - The demonstration is performed once at very slow speed, and again at "training speeds."
    - The instructor will verbalize the exercise to the student passengers within the vehicle.
    - The vehicle can be stopped wherever necessary to ensure a comprehensive verbal instruction process.
    - Pertinent points of the instructional information will be stressed by the instructor's demonstration.
- Single instructor method. (Verbalization only.)
    - This method is the least effective and should only be used when no other method is available.
    - The verbal instructions must be given in greater detail to offset the lack of a visual demonstration.

Demonstration Techniques (continued)

3. Verbal Instruction

- The driving exercise must be explained.
  - Layout
  - Procedure to drive the course
  - Relationship to actual driving situations
- Vehicle placement and control techniques pertinent to the exercise will be explained.

Turn-Around Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Materials Needed

- One law enforcement training vehicle.
- Thirty 18" traffic cones and sixteen 48" delineators.

Goal

The student will gain the necessary skill for maintaining maximum safe vehicle control while performing quick turn-around maneuvers.

Objectives

- The student will demonstrate three basic ways (Three-Point Turnaround, Modified Bootleg, Bootleg) to turn a vehicle so as to proceed in the opposite direction quickly and safely.
- While backing, the student will demonstrate maintaining constant visual awareness of objects to the rear and sides until the vehicle comes to a complete stop.
- The student will demonstrate reverse steering (sometimes referred to as "reverse rolling friction") technique.

Introduction

- Drivers of emergency vehicles are often required to execute quick turn-around maneuvers to change the direction of travel of their vehicles. These turn-around maneuvers may be necessary when:

Introduction (continued)

- A suspect vehicle is observed traveling in the opposite direction.
- An emergency call is received which is in the opposite direction.
- The driver observes an incident requiring investigation and must turn around to return to the location.

Instructor's Note:
Emphasize that a large number of preventable traffic collisions occur when vehicles are backing under ten mph.

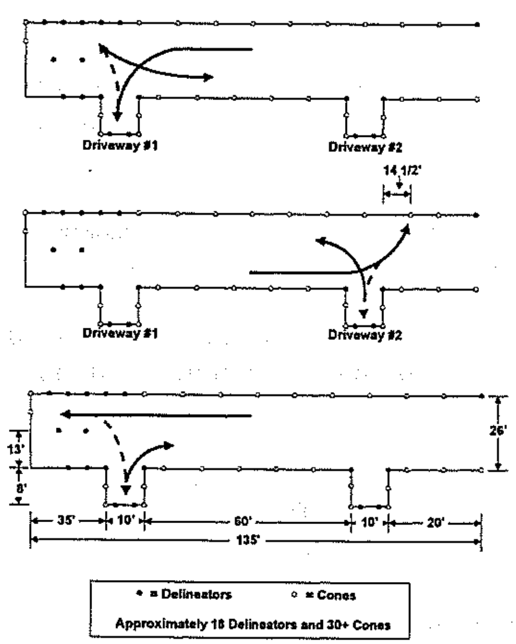
- Turning movements should never be made until a driver has a total view of the surrounding environment.
  - Oncoming traffic - speed.
  - Use mirrors to check for following vehicles.
  - Look over shoulder(s) to check blind spot(s).
  - Sidewalks - pedestrians and bicycles.
  - Parked cars, etc.

Course Description

- The course consists of three basic turning movements, referred to as:
  - "Three-point" turn-around.
  - "Modified boot leg" turn-around.
  - "Bootleg" turn-around.

Course Description (continued)

Turn Around Maneuver Exercise



- The course is on a level, paved area 135 feet in length and 34 feet in width.
    - Traffic cones lay out a road 26 feet in width and 135 feet in length with two driveway aprons.
    - The two driveway aprons are on the same side of the road, 10 feet wide, 8 feet deep, and 60 feet apart.
    - This simulates a normal residential street with narrow driveways.

Procedure to Drive Course

- In preparation for the exercise the vehicle will:
    - From outside the course, enter the roadway along the right side and on the roadside opposite the two driveways.
    - Have the seat and seat belt properly adjusted.
- The vehicle will move forward, staying as close to the right hand side of the street as possible, and reducing speed by braking prior to any turning.
- When the front bumper is opposite the leading edge of the first driveway a left turning movement into that driveway will be made.

Procedure to Drive Course (continued)

- The vehicle will enter the driveway perpendicular to the street and as far to the right as possible.
- The vehicle is stopped prior to hitting any of the traffic cones or flags that outline the driveway, with its front wheels straight.
- Before initiating backing, look to rear and down the roadway in each direction to ensure that it is hazard free.
- The vehicle will be placed in reverse and backed out of the driveway.
  - While backing, the steering wheel will be turned slightly to the right so that the front end of the vehicle moves to the left.
  - Visual awareness forward until the vehicle, particularly the left front fender, is clear of all objects and out of the driveway.
- Upon exiting the driveway, the steering wheel is quickly turned to its full radius to the right.
  - Maintain visual awareness over the right shoulder and through the rear window until the vehicle is completely stopped.
  - Prior to completing the backing movement and while the wheels are still rolling, the steering wheel will be turned in the opposite direction until the front wheels are pointed in the next direction of travel.
  - The vehicle proceeds to the extreme perimeter of the course (far side of road) and is stopped prior to hitting the marker flags or cones.

Instructor's Note:
Explain the need for the input of steering while moving and the problems encountered when not used, i.e., loss of time to turn wheels after stopped; tire damage/wear while turned in stationary position; excessive wear to steering gear.

Procedure to Drive Course (continued)

- The vehicle then moves forward as the steering wheel is turned to the left to avoid striking the cones along the perimeter of the course. This completes the "three-point" turn-around.
- The vehicle will continue toward the second driveway, keeping close to its right side curb line traffic cones.
  - This places the vehicle in a position to execute the next turn-around: "Modified bootleg."
  - When the vehicle's front bumper is approximately even with the leading edge of the opening of the driveway, the steering wheel will be turned sharply to the left.
  - The vehicle is stopped on the opposite side of the street and at a 45-degree angle to the opening of the driveway.
  - Vision to the rear is directed over the right shoulder and through the rear window; the vehicle is backed into the driveway, as straight as possible, and vision is to <u>remain</u> to the rear until the vehicle is <u>fully</u> stopped.
  - Prior to completing the backing movement, steer so that the vehicle's front wheels will be pointed in the next direction of travel.
  - The vehicle will then move forward as the steering wheel is turned to the left to avoid striking cones along the outside perimeter (vehicle's right) of the road.
- The vehicle continues on the right side of the roadway, 20 to 30 feet past the first driveway and then stops.

Procedure to Drive Course (continued)

Instructor's Note:
Explain that the driver will look over the left shoulder when making this left hand backing movement. This will give the best visibility to the rear, as well as observing any oncoming traffic. Explain front-end swing.

- The vehicle should be positioned closer to the centerline than the right hand curb line. Thus, when the left backing motion is made, the front of the vehicle will not swing out and hit the perimeter cones.
- Vision towards the driveway is secured by looking over the left shoulder.
- The vehicle is moved in reverse and the steering wheel is then turned to the left.
- As the vehicle backs into the driveway, vision remains to the rear until the vehicle is completely stopped.
- Again, the vehicle should be positioned in the driveway as straight as possible, using the total available depth.
- Prior to completing backing movement, steer for the next forward movement.
- The vehicle will then move forward and the steering wheel will be turned to the right to avoid striking cones along the perimeter of the course.
- This completes the "Bootleg" turn-around.

Demonstration Phase

- An instructor slowly drives and demonstrates the three types of turn-around maneuvers.
- The demonstration is done at slow speeds so that each maneuver and technique can be discussed.
- A second demonstration consists of driving the course at normal training speeds.
- All the techniques discussed in the slow demonstration will be used.

Practical Application Phase

- The techniques and objectives presented will be demonstrated by the student.
- The student practices proper utilization of the vehicle control techniques.
- The student should perform the exercise as many times as necessary to accomplish proficiency.

Evaluation Phase

Students should be rated on their performance in the following areas:

- Steering forward
- Steer while the tires are rolling
- Use of road position
- Brake application
- Front-end swing
- Rear wheel cheat
- Speed control
- Visual awareness of obstacles to rear
- Smoothness and coordination

Offset Lane Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.

Materials Needed

- One law enforcement training vehicle.
- Twenty-four 18" traffic cones and ten 48" delineators.

Goal

The student will gain the necessary skill and knowledge to control a vehicle while negotiating turning movements when driving forward or backward, under restricted road conditions.

Objectives

- The student will drive a vehicle forward and backward through an offset lane representing impaired conditions, utilizing proper roadway positioning.
- While driving through an offset lane exercise in either direction, the student will demonstrate proper seating position.
- While driving through an offset lane exercise in either direction, the student will demonstrate proper steering techniques.

Introduction

- Emergency vehicle drivers are often required to execute precise turning movements while driving forward or backward. These turning movements may be necessary under restricted conditions.

Introduction (continued)

- The offset lane is designed to simulate some of the following:
  - Lane changes in heavy traffic.
  - Emergency lane changes.
  - Backing in parking lots or between buildings.
  - Maneuvering through congested areas, i.e., alleys, driveways, dead end streets, etc.
- The driver must be aware of the vehicle's dimensions.
  - Assists in determining the proper positioning of a vehicle on a roadway in a confined area.
  - Assists the driver in correctly determining the vehicle's position in relationship with the roadway and surrounding environment.
    - Distances between the front and rear bumpers and obstacles must be known when moving in restricted clearance.
    - Distances between the sides of the vehicle and any other obstacles must be of constant concern.
- Location of the wheels and the direction in which the front wheels are pointed is imperative.
  - The wheels of a vehicle are not on the four corners of the vehicle.
  - There is a definite front and rear chassis "overhang" which must be accounted for when turning.
- When driving forward and approaching an impaired clearance area, a driver must <u>first</u> estimate the width of the area to be traversed. It must be remembered

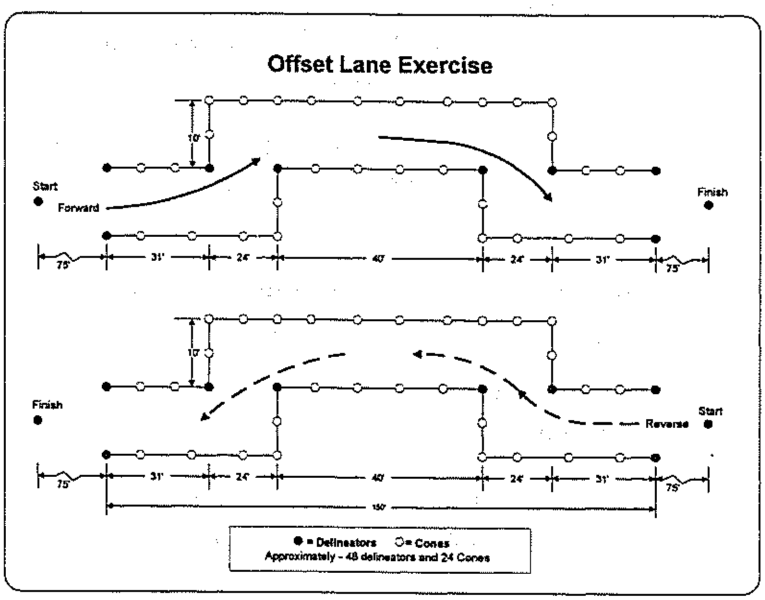
Introduction (continued)

that the average law enforcement vehicle is approximately six feet wide.

- The driver must determine that the vehicle can safely pass through this area.
- If not absolutely sure--stop the vehicle!
- Depth perception and visual awareness are important.

Course Description

- The course is on a level paved area 300 feet in length and 20 feet in width.
- The lane is 150 feet long with a starting and stopping area of 25 to 75 feet at each end.
- The lane is 10 feet in width, with a 10-foot offset section that is 88 feet in length. The openings of the offset portion are 24 feet in length.



- Delineators and cones are used to outline the course. An optional approach would be to use painted traffic lines to outline the course.
- A delineator will be located to the rear of the forward starting position and another to the front of the finish of the forward driving position.

Procedure to Drive Course

- This exercise is divided into two phases
  - Driving forward.
  - Driving backward.
- Start in front of the starting delineator with the driver's seat and seat belt properly adjusted. Emphasis should be placed on students using the least amount of steering input, which will minimize rear wheel cheat, weight transfer and front-end swing.
- Driving Forward
  - Move forward, smoothly and quickly accelerating to approximately 15 mph and maintain speed.
  - Enter the lane on the extreme right hand side of the roadway to enter a left turn.
  - Stay to the right until approximately 18 feet into the lane.
  - A left turning movement is then made, directing the vehicle into the first opening and toward the offset portion.
  - The vehicle should be driven as close as possible to the left delineator at the opening.
  - As the vehicle enters the offset portion, the steering wheel is gradually turned to the right, making a transition from the initial left turning movement to a right turning movement.
- As the vehicle exits the first opening, steer to the left side of the offset lane.
  - Minimizes weight transfer.
  - Places vehicle in proper road position for the next running movement.

Instructor's Note:
Emphasize road position, i.e., utilizing all of the available roadway to straighten out the turn. Drive through the turn, instead of around it.

Procedure to Drive Course (continued)

- The vehicle will continue in the right turning movement until it enters into the second opening.
  - The amount of steering should remain constant from the first opening to the second opening.
  - Allow for a smooth <u>continuous</u> right turning movement.
- As the vehicle re-enters the original lane of travel, the steering wheel is smoothly turned to the left, keeping the vehicle as close as possible to the left delineator at the opening.
- The vehicle will exit the second opening and continue moving to the right perimeter of the course.
  - Minimizes weight transfer.
  - Places vehicle in proper road position to exit the course.
- As the vehicle is straightened out, it will remain on the extreme right side of the lane as it passes out of the exercise.
- Deceleration is not to occur until the vehicle is completely out of the laned area.
- The vehicle continues to the end of the course, stopping at the finish cone by utilizing the proper braking technique (7-8-9).
- Driving Backward
  - The gear selector is placed into "reverse."
  - Visual awareness to the rear will be obtained by properly turning to the right in the seat and directing vision through the rear window.

Procedure to Drive Course (continued)

Instructor's Note:
Emphasize late steering problems, as they may occur at this point. When a vehicle moves in reverse, the wheels that do the turning are "following" the driver. The rear wheels must be "pointed" by proper use of the front wheels. Steering control is not maintained at the "leading" end of the vehicle, because the rear wheels cannot be turned.

- The vehicle will move back, entering the lane with a road position that will allow for front-end swing.
- The vehicle will enter the lane at just above an idle speed.
- As the vehicle enters the lane, a slight left turning movement (right as viewed by driver) is initiated, "pointing" the vehicle toward the first opening.
- As the vehicle enters the opening, the right delineator (left to driver) at the opening is used as a guide, and the steering wheel is smoothly turned to the right.
- The vehicle passes as close as possible to the delineator during this transition from the left turning movement into a right turning movement.

- As the vehicle exits the first opening, steer to the left side (driver's right) of the offset lane.
  - Minimizes weight transfer.
  - Places vehicle in proper road position for the next turning movement.
- The vehicle will continue in the right turning movement until it is pointed toward the second opening.
- The amount of steering should remain constant from the first opening to the second opening, allowing for a smooth continuous turning movement.
- As the vehicle enters the second opening, the right marker flag or delineator at the opening is used as a guide, and the steering wheel is smoothly turned to the left.

Procedure to Drive Course (continued)

- The vehicle will pass as close as possible to this marker/delineator during the transition from right to left turning movement.
- The vehicle will exit the second opening and continue toward the right perimeter of the course.
  - Minimizes weight transfer.
  - Places vehicle in proper road position to exit the lane.
- If the vehicle is straightened it will remain on the extreme right side of the lane as it passes out of the exercise.
- Deceleration does not occur until the vehicle is completely out of the laned area.
- The vehicle continues to the end of the course, stopping prior to the starting delineator.
- Visual awareness to rear will be maintained until the vehicle comes to a complete stop.

Demonstration Phase

- The instructor will demonstrate the proper seating and accepted hand positioning for both forward and reverse driving.
  - Forward
    - Left foot is flat on the floor and leg is braced against the door.
    - Ball of the right foot is on the accelerator pedal with the heel on the floor.

Demonstration Phase (continued)

- Sitting straight in the seat with hips against the seat back rest.
- Hands comfortably placed on each side of the steering wheel (not top or bottom).

- Reverse
  - Use one of the approved reverse steering methods.
  - The left leg and foot will brace the body in this position.
  - Proper utilization of the seat belt will be demonstrated.
  - Visual awareness to rear while backing will be emphasized until vehicle comes to a full stop.
- An instructor <u>slowly</u> demonstrates both directions of the "offset lane" exercise.
- The first demonstration is done at slow speed so that each maneuver and technique can be discussed.
- A second demonstration consists of driving the course at normal training speeds.

Practical Application Phase

- Each student will complete both directions of the "offset lane" exercise.
- The student will conform to all objectives and techniques presented.

Evaluation Phase

Student will be evaluated on practical application performance in both forward and reverse movements in the following areas:

- Steering control
- Throttle control
- Speed control
- Rear wheel cheat
- Front-end swing
- Brake application
- Visual awareness of obstacles to rear
- Smoothness and coordination
- Use of road position

Steering Course (Forward and Reverse) Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.

Materials Needed

- One law enforcement training vehicle.
- Minimum of six 48" delineators.

Goal

The student will gain the necessary skill and knowledge to operate an emergency vehicle in both forward and reverse directions, using the proper steering methods for maximum vehicle control.

Objectives

- Given a steering course exercise, the student will demonstrate the proper application of the forward and reverse methods of steering.
- Given a steering course exercise, the student will demonstrate proper coordination of steering and throttle control to minimize weight transfer during turning movements.
- Given a steering course exercise, the student will safely maneuver around obstacles without striking them.

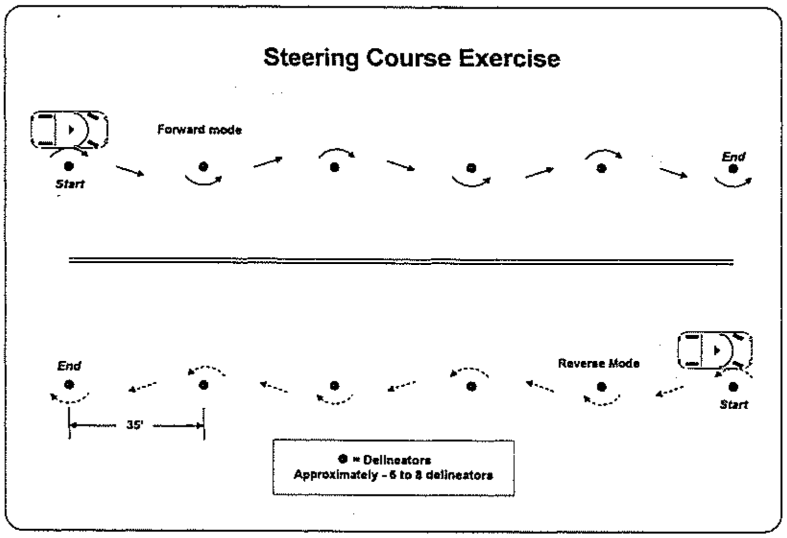
Introduction

- The steering course is designed to emphasize the importance of smoothness and coordination of steering and throttle control.

Introduction (continued)

- Looking ahead to prepare for any turning movement is essential for maximum vehicle control and safety. A preoccupied or inattentive driver will experience a delay in the perception of, and reaction to, hazardous situations on the roadway.

Course Description



- The course is 175 feet in length and 24 feet in width on a straight, level, paved surface.
- The course consists of a series of six delineators placed 35 feet apart in a straight line.

Procedure to Drive Course

- The course will be driven forward, then in reverse, with the driver properly seat belted. Emphasis should be placed on students using the least amount of steering input, which will minimize rear wheel cheat, weight transfer and front-end swing.
- Starting in the forward direction, the vehicle is driven at a speed of 5-10 mph, weaving in-and-out of the delineators, making a continuous series of "S" turns using the accepted steering method in conjunction with a smooth, steady throttle application.

Procedure to Drive Course (continued)

- The vehicle's placement as it passes from one delineator to another should provide sufficient distance on the sides of the vehicle to avoid striking the delineators.
    - "Rear wheel cheat" is the tighter tracking of the rear wheels, as compared with the front wheels, in a turn. Allow for tighter turning of rear of the vehicle.
    - Judgment of distances can be more difficult on the right side of the vehicle, the side away from the driver.
- Once the vehicle has completed one pass in the forward direction, it will immediately be driven for one pass in reverse toward the original starting position, retracing the previous route.
    - The vehicle is driven at an idle speed, approximately 3-5 mph, while weaving in and out of the traffic delineators.
    - Proper hand positioning and body placement as described in the vehicle control techniques are extremely important to maximize vehicle control and rear vision.
    - The driver must also be careful not to steer too late in reverse, and allow sufficient distance between the vehicle and delineators.
    - Bring the vehicle to a complete stop, looking to the rear at all times.

Demonstration Phase

- An instructor will demonstrate proper steering for both forward and reverse.
- Smooth application of steering and throttle will be emphasized.

Practical Application Phase

- The student will drive through this serpentine course forward, backward and forward again providing an opportunity to practice the accepted steering methods and proper throttle control.
- Smoothness and proper distancing between vehicle and delineators will be demonstrated.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Steering control forward and reverse
- Rear wheel cheat
- Front-end swing
- Speed control
- Visual awareness of obstacles to rear
- Smoothness and coordination

Chicane Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.

Materials Needed

- One law enforcement training vehicle.
- Twenty 18" traffic cones and twenty 48" delineators.

Goal

The student will gain the necessary skill and knowledge to control a vehicle while negotiating turning movements when driving forward or backward, under restricted driving conditions.

Objectives

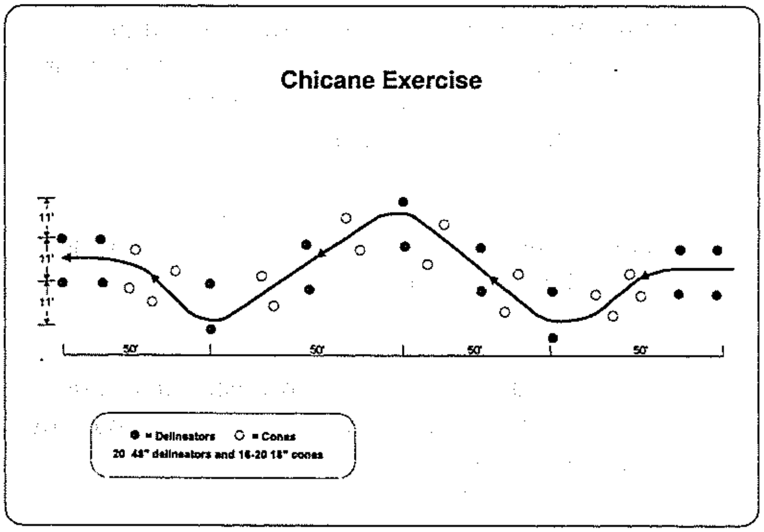
- The student will demonstrate the ability to safely and efficiently drive a vehicle forward and backward through impaired clearance areas, utilizing proper control techniques.
- The student will demonstrate the proper seating and steering techniques for driving a vehicle in either direction.
- The student will demonstrate proper coordination of steering and throttle to minimize weight transfer during turning movements.
- The student will successfully judge distances and safely maneuver in and out of obstacles without striking them with any part of the vehicle.

Introduction

- The chicane is designed to emphasize the importance of smoothness and coordination of steering and throttle control.
- Proper steering technique should be used while driving both forward and backward.
- Looking ahead in the direction of travel to prepare for any turning movement is essential for maximum vehicle control and safety.
- Emergency vehicle drivers are often required to execute precise turning movements while driving forward or while backing.
- The chicane is designed to simulate some of the following:
  - Backing in parking lots or between buildings.
  - Maneuvering through congested areas, i.e., alleys, driveways, dead end streets, etc.
- In any driving situation, a good driver must know the vehicle's dimensions. This will assist in determining the proper positioning of a vehicle on a roadway in restricted driving conditions.

Course Description

- The course is on a level paved area 250 feet in length and 33 feet in width.



- The chicane is 200 feet long with a starting and stopping area of 25 feet at each end.
- The driving lane is 11 feet in width.
- Delineators and cones are used to outline the course.
- One delineator will be located at each of the far ends of the exercise to indicate starting and stopping positions.

Procedure to Drive Course

- The course will be driven forward, then in reverse, with the driver properly seat belted.
- Starting in the forward direction, the vehicle is driven at a speed of 5-10 MPH, weaving in and out of the delineators, making a continuous series of "S" turns using the two-handed steering method in conjunction with smooth, steady throttle application.
- The vehicle's placement as it passes from one side to another should provide sufficient distance on each side to avoid striking the delineators with any part of the vehicle.
  - "Rear wheel cheat" is the tighter tracking of the rear wheels, as compared with the front wheels, in a turn. Allow for tighter turning of rear of the vehicle.

Procedure to Drive Course (continued)

- Judgement of distance can be more difficult on the right side of the vehicle; the side away from the driver.

- Once the vehicle has completed one pass in the forward direction, it will immediately be driven for one pass in reverse toward the original starting position, retracing the previous route.
  - The vehicle is driven at an idle speed, approximately 3-5 MPH, while weaving in and out of the delineators.
  - Proper hand positioning and body placement as described in the vehicle control techniques are extremely important to maximize vehicle control and rear vision.
  - The driver must also be careful not to steer too late in reverse and allow sufficient distance between the vehicle and delineators.
  - Bring the vehicle to a full stop, looking to the rear at all times.

Demonstration Phase

- An instructor will demonstrate proper steering technique for both forward and reverse while driving the course.
- Smooth application of steering and throttle will be emphasized.

Practical Application Phase

The student will drive the course in the prescribed manner utilizing the instructed control techniques.

Evaluation Phase

The student will be evaluated on the following areas of control techniques:

- Steering control forward and reverse
- Rear wheel cheat
- Front end swing
- Speed control
- Visual contact with obstacles to rear
- Smoothness and coordination

"T" Driveway Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Materials Needed

- One law enforcement training vehicle.
- Seventeen 18" traffic cones and nine 48" delineators.

Goal

The student will learn the basic movements of a vehicle while maneuvering back and forth and turning in and out of tight environmental situations.

Objectives

The student will successfully demonstrate how to properly and safely maneuver a vehicle in and out of a "T" shaped driveway or blocked "T" alleyway where there is a minimum of space.

Introduction

- A vehicle will often be placed in restricted area situations, and it is important to safely maneuver both in and out of such circumstances.
- This training will instill confidence in the driver through successful completion of the task.
- It is essential to reduce vehicle and property damage, as well as potential liability litigation.
- The following are terms and concepts which will instill a basic knowledge of movement of various areas of a vehicle during tight maneuvers.

Introduction (continued)

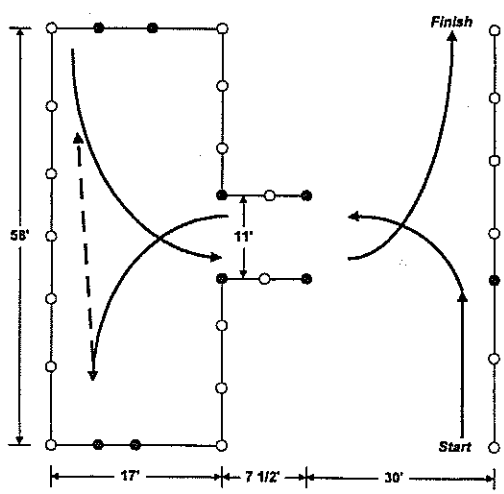
- Rear Wheel Cheat: The rear wheels track differently and tighter than the front wheels during steering movements.
- Front-end Swing: The front-end of the vehicle swings out during steering movements in reverse.
- Rear Vision: The critical importance of physically looking toward the rear of the vehicle while backing until the vehicle completely stops.
- Use of Mirrors: Normal vehicle mirrors are not of sufficient size or design to solely rely on for safe backing.
  - Blind spots due to vehicle design
  - Curved mirror on passenger side distorts objects

- Road Position: Use of available roadway to fullest advantage; plan ahead in placing vehicle to ensure that once inside a driving problem it will properly and safely be able to exit.
- The student should learn to judge physical dimensions of a law enforcement vehicle.
  - Front-end push bars
  - Rear bumper
  - Right and left sides

Course Description

- The driving area should be on level pavement at least 58 feet wide and 54 ½ feet long (including width of approach road).
- The vehicle will enter the driveway area from a left turn maneuver from a roadway approximately 30 feet wide.
- The dimensions of the driveway are:
  - 58 feet across the top of the "T."
  - 17 feet deep from the top of the "T" to the entrance.
  - The "mouth" or entrance of the "T" base will be 11 feet wide and 7 ½ feet deep.

"T" Driveway Exercise



● = Delineator O = Cone

Approximatley - 9 to 12 delineators and 17 cones

- The course will be outlined with cones, utilizing the large 48" delineators in the most critical areas.
  - The four corners of the "mouth."
  - Both ends of the top of the "T," two on each end.
  - The position on the roadway outside the T-Driveway that indicates the turning point for entering.
- The various dimensions may vary with the size and capabilities of the vehicle used.

Procedure to Drive Course

- The Approach
  - Road position on the approach road is critical before the left turning movement into the entrance of the driveway.
    - Look and plan ahead.
    - For a left turn - set up wide to right.
  - Keep speed down to ensure safety and control.
    - Tight area to maneuver requires slower speeds.
    - Increased speed can increase the radius of the turn.
  - Road position while in the entrance of the driveway is also important.
    - Set up by crowding wide to right for left turn into top of driveway.
    - This will compensate for rear wheel cheat in turn.
- Driving within the "T" Driveway.
  - Steering accuracy into top of the "T" from the entrance is important.
    - Avoid hitting delineators at entrance.
      - May require briefly straightening wheels in mouth of the "T."
      - Don't leave wheels straight too long to avoid hitting cones at the very top edge of the "T."

Procedure to Drive Course (continued)

- Judgment of front-end distance.
    - Leave sufficient room for front bumper and push bars at left end of top of the "T."
    - Straighten the vehicle's front wheels in the top of the "T" just prior to coming to a complete stop.
- Backing within top of the "T."
    - Look to rear at all times while backing.
    - Smoothly steer the vehicle right to crowd it into the corner of the opposite end, allowing for proper road position to set up to exit the mouth of the "T."
    - The vehicle is stopped parallel with the top edge of the "T" with sufficient safe margin between rear bumper and right end of the "T."

- Exiting the "T."
    - Steering accuracy is important to compensate for rear wheel cheat while exiting left through mouth of the "T."
        - Avoid being too tight to delineators on inside of left turn.
        - Avoid excessive throttle which could widen exit path into delineators on outside of turn.
    - May require slight straightening of wheels just as the vehicle exits mouth of the "T" and then further left steering to enter the roadway.

Demonstration Phase

- The instructor slowly demonstrates the proper techniques described earlier.
- Emphasize smoothness, safety and road positioning.

Practical Application Phase

The techniques presented will be demonstrated by the student.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Steering control
- Use of road position
- Rear wheel cheat
- Front-end swing
- Speed control
- Smoothness and coordination
- Visual contact with obstacles to rear

Parallel Parking Exercise

> ***PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.***

Materials Needed

- One law enforcement training vehicle.
- Ten 48" delineators.

Goal

The student will gain the necessary knowledge and ability to parallel park a vehicle safely and efficiently within legal limits.

Objectives

The student will demonstrate the five basic steps that are used to park a vehicle in a limited space.

Introduction

Briefly explain why it is important to have the ability to properly parallel park a vehicle in a limited space.

- Instills confidence in the student and portrays a professional image when arriving at the scene of a law enforcement incident.
- Unless responding to an emergency call, the officer is required to conform to the regulations of the California Vehicle Code.
  - This does not mean double parking with warning lights flashing.
  - Flashing red or amber emergency lights on an illegally parked law enforcement vehicle does

Introduction (continued)

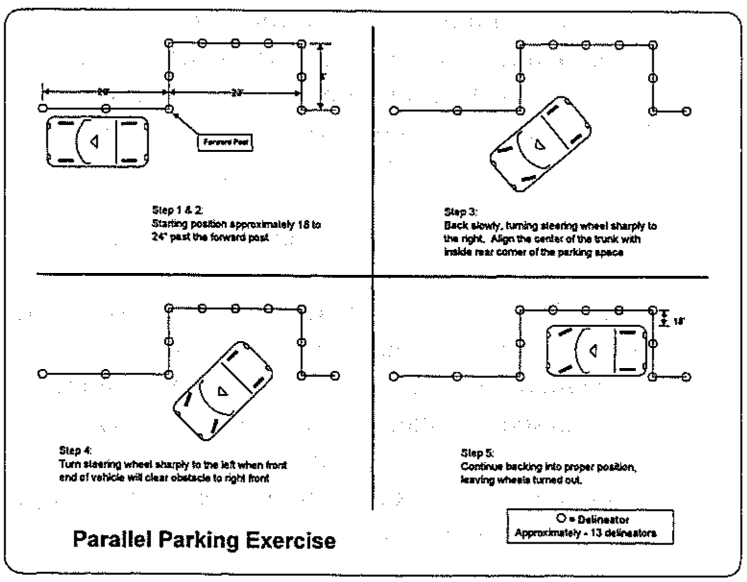
not make that manner of parking legal, unless an emergency is present.

- This parking exercise teaches the driver the basic techniques of reverse driving.
- Demands that a driver have an excellent knowledge of the physical dimensions of the vehicle and its turning radius.

Section 22502(a) CVC: "Except as otherwise provided in this chapter, every vehicle stopped or parked upon a roadway where there are adjacent curbs shall be stopped or parked with the right-hand wheels of such vehicle parallel with and within 18 inches of the right-hand curb...where no curbs or barriers bound any roadway, right hand parallel parking is required unless otherwise indicated."

Course Description

- The parking area is approximately 23 feet long and 8 feet wide.
- Delineators are used at each end to simulate legally parked vehicles.



Parallel Parking Exercise

- Delineators are utilized along the right side to simulate a curb.
- An additional delineator is placed 20 feet ahead of the parking space as a guide for positioning the front of the vehicle prior to the parking maneuver.

Procedure to Drive Course

- The five-step method for parallel parking a passenger vehicle, using one continuous motion, in a limited space:

  - Position the vehicle parallel and 18-24 inches to the left side and slightly ahead of the delineators that represent a vehicle parked in front of the available space. A single delineator 20 feet ahead of the parking space designates where to place front of vehicle prior to maneuver.

  - Start backing up slowly until the rear bumper of the law enforcement vehicle is approximately even with the traffic cones representing the rear bumper of the parked vehicle. Begin turning the steering wheel quickly to the right and continue backing slowly.

    - Full lock steering may not be needed at this point.

    - All steering movements should be done while the vehicle is in motion, to prevent excessive wear to steering components and tires.

  - Continue backing until the vehicle is approximately at a 45° angle or when the center of the trunk is in a straight line with the delineator that represents the right corner of a parked vehicle to the rear of the available parking space.

  - When this angle or line is obtained, straighten the front wheels quickly and maintain the angle of movement. The driver then directs attention to the front until the front bumper on the law enforcement vehicle has cleared the rear bumper of the parked vehicle. The driver then turns the steering wheel sharply to the left, directing attention to the rear and continues backing slowly. Full lock steering may be needed at this point.

Procedure to Drive Course (continued)

- Stop the vehicle just prior to touching the delineators that represent the front bumper of the parked vehicle and leave the front wheels turned to the left for a quick exit.
- Both right wheels will be within 18 inches of the curb.
- If the officer is going to be within sight of the vehicle, it is recommended that the vehicle be left in this position to facilitate a quick exit if necessary.
- If the driver is going to be away from the vehicle for any length of time, it is suggested that the vehicle be centered in the parking space to allow the exiting of either vehicle to the front or rear.

- Parked vehicles must have the wheels blocked by turning them against the curb when parked on a steep hill (22509 CVC).

Demonstration Phase

- An instructor will demonstrate the proper procedures used for parallel parking of a vehicle by slowly performing each step of the five-step method.
- At the proper time, looking to the rear until completely stopped will be emphasized.
- A seat belt will be worn during the demonstration.

Practical Application Phase

- The student will utilize the techniques presented and practice proper timing, turning radius, correct angle, and speed.
- Safety belts will be worn.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Approach position (18-24 inches)
- Steering control
- Entry angle
- Front-end swing
- Visual awareness of obstacles to rear
- Correct parking (18 inches or less from the curb)
- Single movement placement
- Safe exit

Cul-de-Sac "U" Turn Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Materials Needed

- One law enforcement training vehicle.
- Twelve 18" traffic cones and five 48" delineators.

Goal

To enable the student to negotiate a 360° turning maneuver in a limited space.

Objectives

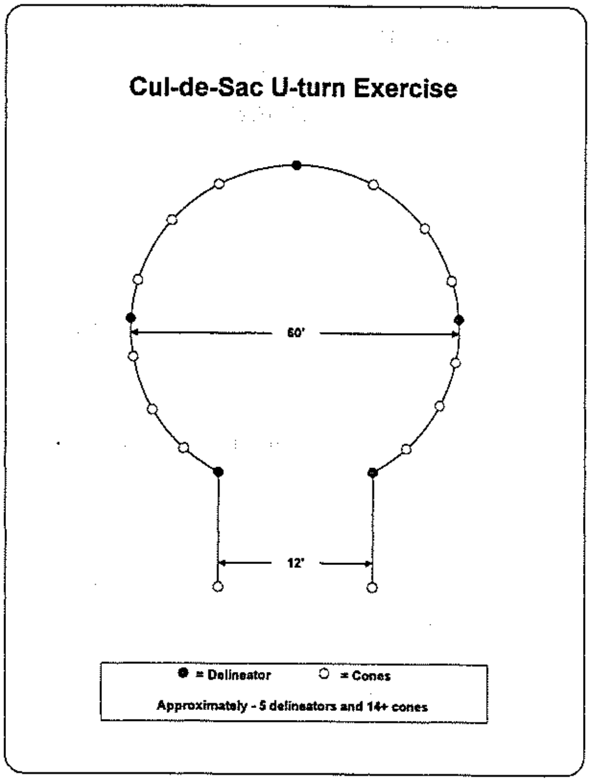
- To demonstrate the effect of excessive speed on a vehicle's turning radius (slip angle).
- To illustrate that if properly executed, a vehicle can turn 360° within a relatively limited area.
- To present the student with the skill and knowledge to perform this maneuver.

Introduction

- The law enforcement driver by necessity must often reverse the direction of vehicular travel. This sometimes is best accomplished by performing a "U" type turn in a cul-de-sac situation.
- The exercise is designed to illustrate specific problem areas in this type of maneuver and to instruct in proper driving techniques.

Course Description

- The course is basically circular in design and bound by traffic cones and delineators.



- An opening in the course is utilized for both ingress and egress to accomplish the true 360° turning maneuver.
- The diameter of the driving circle is 60 feet with the entrance opening being 12 feet wide.

Procedure to Drive Course

- The vehicle will be driven into the cul-de-sac opening. The road position at the mouth of the cul-de-sac will be to the left side (to compensate for rear wheel cheat) in preparation for entering and driving right along the inner perimeter of the exercise.
- The vehicle will be maneuvered along the extreme right hand inner perimeter of the course, and basically follow the circular contour of the boundary cones in a left hand direction for the first half of the circular distance.

Procedure to Drive Course (continued)

- As the vehicle's front-end approaches the half way position, maximum left-hand steering is executed.
- The vehicle will then be driven through the course area. This will be accomplished at idle speed to maintain a tight turning radius.
- When the entire turning maneuver is completed, the vehicle will be driven out of the cul-de-sac using the provided opening.
- The vehicle has now completed a 360° turn and exits in the opposite direction from the initial entrance.

Demonstration Phase

- An instructor-driven vehicle will negotiate the course very slowly with emphasis being placed on vehicle placement, throttle control, steering control and smooth vehicle handling.
- Another instructor will verbalize the demonstration to the assembled students.

Practical Application Phase

The student driver will negotiate the course in the prescribed manner using the proper control techniques.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Speed judgment
- Vehicle placement
- Steering control

Bootleg Turn Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.

Materials Needed

- One law enforcement training vehicle.
- Eight 48" delineators.

Goal

To acquaint the student with the proper techniques and inherent hazards of a backing turn (bootleg) maneuver.

Objectives

- To strongly emphasize vehicle control when driving in reverse.
- To stress the importance of visual awareness of obstacles around and behind the moving vehicle.
- To acquaint the student with the mechanics of "front-end swing."
- To exercise skill and judgment while maneuvering a vehicle in a limited area.

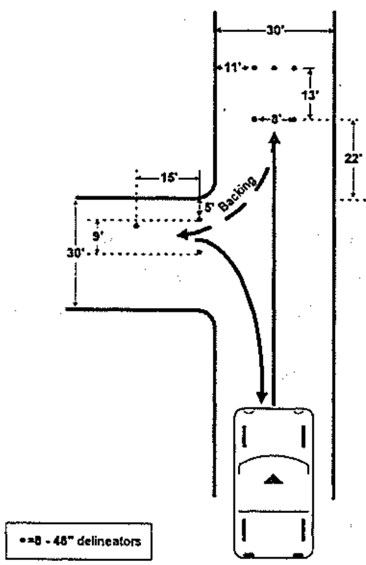
Introduction

- Drivers of emergency vehicles are frequently required to make turn-around maneuvers.
- Students are informed that a large percentage of traffic collisions occur under 10 MPH while backing.

Course Description

- The course consists of two "driveways" set at right angles to each other.
  - The driveway dimensions are 13' x 8' and 15' x 9' and are marked by traffic delineators.
  - Sufficient room (27') is allowed between the driveway openings to accommodate the dimension of the training vehicle.

Bootleg Turn Exercise



Procedure to Drive Course

- The driver approaches the exercise driveways which are placed with an opening directly in front of the vehicle and another opening to the left or driver's side.
- The driver will pass the left side driveway and drive the vehicle into the driveway to the front of the vehicle.
- As the vehicle enters the driveway, it is placed to the extreme left-hand (driver's) side, crowding but not contacting the boundary delineators.

Procedure to Drive Course (continued)

- The vehicle is driven forward into the driveway as far as allowed and stopped.
- The vehicle is then placed in reverse while the driver glances to the rear to ensure the pathway is clear.
- As the vehicle is backed out of the driveway, a slight amount of steering input is applied to begin the turning movement into the other driveway.
- The driver's attention at this time is directed to the vehicle's right front to ensure clearance of obstacles, monitoring front-end swing.
- As the vehicle clears the driveway, the driver now looks over the right shoulder and directs attention rearward until the vehicle comes to a complete stop.
- The vehicle is backed straight into the second driveway as far as space allows.

Demonstration Phase

- An instructor will slowly drive the course emphasizing:
  - Obstacle collision safety.
  - Smooth vehicle control techniques.
  - Steer while moving.
  - Proper visual direction.
- Another instructor will verbalize the demonstration to the assembled students emphasizing pertinent points.

Practical Application Phase

The student driver will negotiate the course utilizing the instructed techniques.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Steering control
- Collision avoidance
- Visual awareness of obstacles to rear
- Proper use of road position
- Brake application
- Throttle application

Angled Driveway Exercise

> ***PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.***

Materials Needed

- One law enforcement training vehicle.
- Eight 28" cones and ten 48" delineators.

Goal

The student, through instruction and practical application, will properly back a vehicle into a limited area while effecting direction changes.

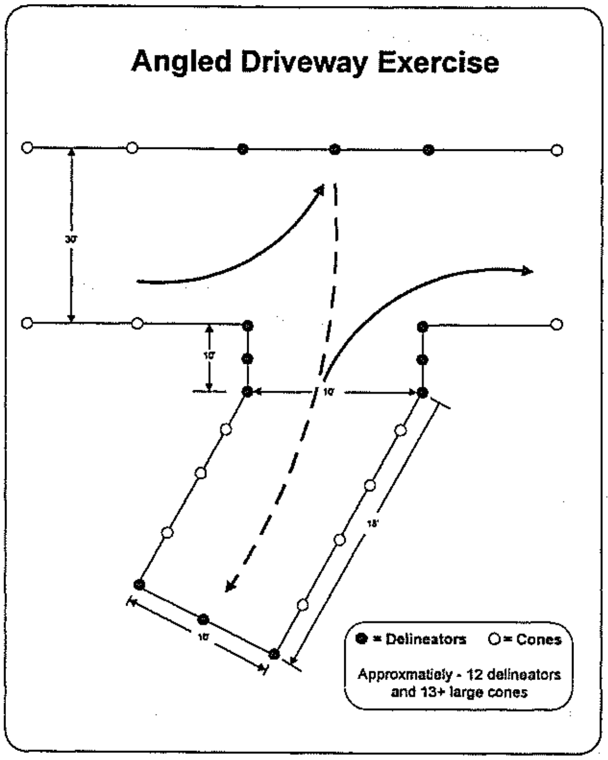
Objectives

- The student will safely drive a vehicle in reverse in a limited maneuvering area.
- The student will be exposed to and compensate for a front-end swing situation.
- The student will recognize the importance of visual awareness of obstacles for purposes of collision avoidance.

Introduction

- During routine patrol situations, the driver is often required to maneuver a vehicle within limited areas, both forward and in reverse. A large percentage of traffic collisions and body damage to emergency vehicles occurs under these situations.
- This course is utilized to provide a situation in which the student driver can gain knowledge and expertise to contend with these circumstances.

Course Description



Angled Driveway Exercise

- The course represents a driveway perpendicular to a simulated city street, 30' wide.
- The driveway is 10' wide and 28' long, outlined in cones and delineators.
- The first ten feet of the driveway are straight, with the remaining eighteen feet angling off to the driver's side at approximately 35°.

Procedure to Drive Course

- The vehicle is driven down the simulated city street approaching the driveway, which is located to the passenger side.
- As the vehicle's front end nears the immediate corner of the driveway, the vehicle is driven into a hard left-hand turn and placed perpendicular to the roadway; ideally, the vehicle's trunk is lined up with the entrance to the driveway.
- The driver will now back the vehicle into the driveway, looking over the right shoulder the entire way.

Procedure to Drive Course (continued)

- The driver's side boundary cones are utilized as a reference for safe vehicle placement.
- The vehicle is backed in a straight line conforming to the driveway boundaries for the initial 10 feet.
- As the vehicle's rear bumper is adjacent to the point of angle, steering is input to continue the vehicle's rearward progress in conforming to the configuration of the driveway.
- As the vehicle is directed into the angled portion of the driveway, the steering is returned to neutral to prevent front-end swing from causing contact with the passenger side boundary cones.
- The vehicle is backed down the driveway as far as possible and brought to a complete stop.
- The vehicle is then driven forward out of the exercise.

Demonstration Phase

- An instructor will drive the course at a slow speed emphasizing vehicle placement, visual direction, steering control, and collision avoidance.
- Another instructor will verbalize the demonstration to the assembled students.

Practical Application Phase

The student will drive the course in the prescribed manner utilizing the instructed control techniques.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Use of road position
- Visual awareness of obstacles to front and rear
- Steering control
- Front-end swing

Steering Course Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.

Materials Needed

- One law enforcement training vehicle.
- Minimum of fifteen 48" delineators or 28" cones.

Goal

The student will gain the necessary skill and knowledge to operate an emergency vehicle using the proper steering methods for maximum vehicle control.

Objectives

- The student will demonstrate the proper application of the approved steering method as opposed to other steering methods.
- Emphasize smoothness of turning movements in coordination with vehicle weight shift and proper throttle control.

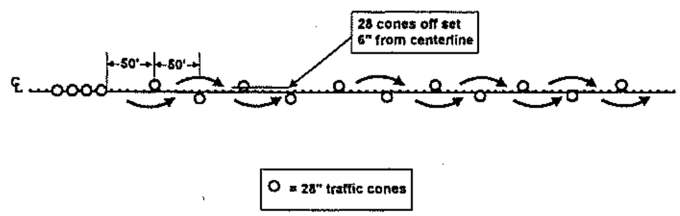
Introduction

- The student will learn to maneuver a vehicle forward through a series of "S" turns at a speed of approximately 12-15 MPH.
- The student will concentrate on smooth vehicle control and steering accuracy.
- Looking ahead to prepare for any turning movement is essential for maximum vehicle control and safety.

Course Description

- The course is 750 feet in length and 24 feet in width on a straight, level, paved surface.

Steering Course Exercise



- The course consists of a series of fifteen delineators or cones placed 50 feet apart in a straight line, offset approximately 6 inches from center.

Instructor's Note:
This course can be shortened or lengthened by deleting/adding delineators to fit available training space.

Procedure to Drive Course

- Students drive through the course forward only, turn the vehicle around, and return in the opposite direction.
- The vehicle is operated at a speed of approximately 12-15 MPH, weaving in and out of the delineators, making a continuous series of "S" turns using the approved steering method in conjunction with a smooth, steady throttle application.

Demonstration Phase

The instructor will demonstrate the exercise utilizing the proper steering technique.

Practical Application Phase

The techniques and objectives presented will be demonstrated by the student.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Smoothness and coordination
- Steering control
- Throttle application
- Two-hand steering technique (Shuffle steering)
- Rear wheel cheat

Reverse Driving Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Materials Needed

- At least one law enforcement training vehicle.
- Sixteen 28" cones and ten 48" delineators.

Goal

- The student will gain the knowledge and skill necessary to back a vehicle through a series of obstacles within a limited driving area.
- The student will understand the importance of visual awareness of obstacles while backing a vehicle in order to avoid collisions.

Objectives

- The student will exercise proper speed judgment while maneuvering a vehicle within a limited space.
- The student will demonstrate the process of placing a vehicle in close proximity to a hazard ("crowding the hazard") for vehicle placement purposes.

Introduction

- The driver will often be placed in situations requiring that the vehicle be backed through obstacles within a limited area.
- Unfamiliarity with the proper vehicle control techniques can result in vehicle and property damage.

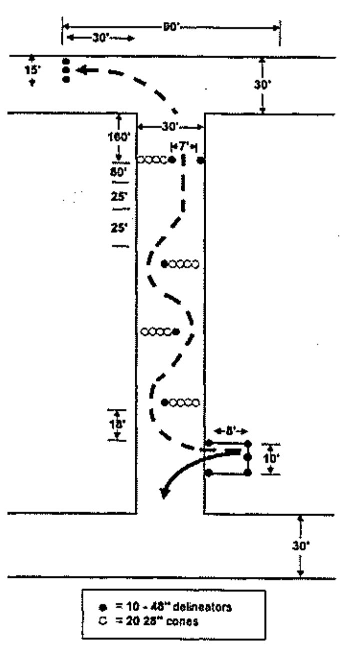
Introduction (continued)

- "Crowding the hazard" is stressed in this exercise to allow the vehicle to be safely backed through numerous simulated obstacles.

Course Description

- The course basically is a "T" in configuration.
- The top of the "T" is 90' long and 30' wide.

Reverse Driving Exercise



- The straightaway of the "T" is 450' long and 30' wide and contains the driving obstacles included in the exercise.
- The obstacles include impaired clearance, cone obstacles with driving openings, and a driveway which concludes the exercise.
- The impaired clearance is 160' deep into the straightaway and consists of a line of cones across the roadway with a 7' opening on the right side.
- The cone driving obstacles begin 80' beyond the impaired clearance.
- The sixteen cones are arranged in four series of four cones each, occupying 25' of roadway per series. The individual series are separated by a 25' driving opening.
- A driveway, 8' long and 10' wide is placed off the roadway on the right side and 18' beyond the last series of cones.

Procedure to Drive Course

- The vehicle is driven forward along the right curb lane of the upper part of the "T."
- The vehicle proceeds past the straightaway for 30' and will be brought to a stop next to cones placed across the roadway for reference.
- The vehicle is placed in reverse and proceeds to back into the straightaway area.
- The driver will initially look over the left shoulder as the vehicle backs onto the straightaway. As the turn is completed, the driver will shift vision to over the right shoulder and remain so for the remainder of the exercise.
- The vehicle proceeds down the straightaway and is placed to the right curb line for negotiation of the impaired clearance.
- Once through the impaired clearance, the vehicle is backed through the driving openings within the series of cones which basically constitutes a chicane.
- The limited street width necessitates the driver to place the vehicle in proximity to the cones while maneuvering to allow for front-end swing.
- Once through the series of cone obstacles the vehicle is backed onto the driveway, at the end of the course, and brought to a stop.
- The method of return to the starting point is discretionary.
- The vehicle may be driven back through the course in a forward direction.
- The course may be exited completely and a return route established.

Procedure to Drive Course (continued)

- The exercise may be driven in conjunction with other exercises, thus the vehicle would be directed to the next problem.

Demonstration Phase

- An instructor-driven vehicle will slowly negotiate the course emphasizing steady throttle, timely and smooth steering and vehicle placement.
- Vehicle placement will be stressed as it relates to "crowding the hazards."
- Another instructor will verbalize the demonstration to the assembled students.

Practical Application Phase

- The student driver will negotiate the course employing the demonstrated control techniques.
- Vehicle speed will be relatively slow initially, enabling the student driver to concentrate on proper vehicle control.
- The pace will be increased to the point that the student driver will attain a constant smooth speed.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Visual awareness of obstacles to rear
- Steering control
- Throttle control
- Use of road position (crowding the hazards)
- Speed control

Wheel Placement "Botts Dots" Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Materials Needed

- One law enforcement training vehicle.
- Two 28" cones.
- One hundred and four (104) Botts Dots.
- Driving area approximately 220' long and 20' wide.

Goal

To instill within the student, a realization of the dimensions of the vehicle being driven.

Objectives

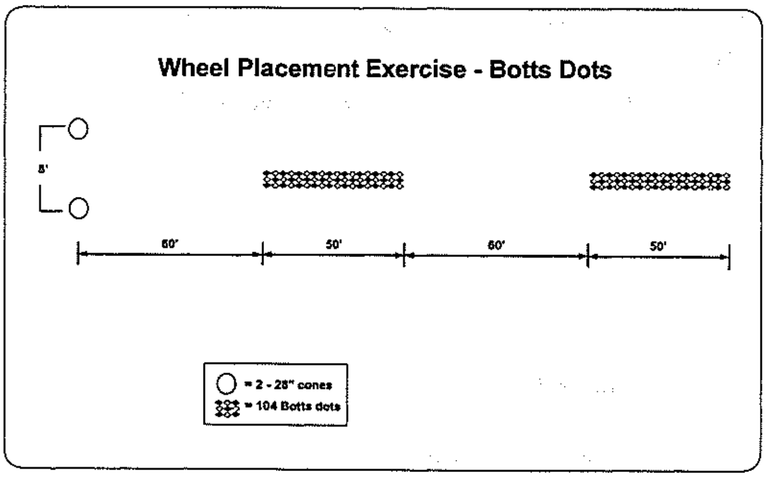
- To acquaint the student with vehicle wheel placement.
- To gain proficiency in precise vehicle placement.

Introduction

- Many slow speed traffic collisions are directly attributable to lack of consideration for the size of the vehicle driven.
- This exercise enables the driver to not only see but also "feel" wheel placement.
- This exercise can be driven as an individual problem or incorporated into a skill course.

Course Description

- The course is laid out on a level stretch of roadway, approximately 220' long by 20' wide.
- Two rows of dots, linear in design, are placed 60' apart.



- The dots are arranged in two parallel lines, approximately 6" apart.
- Sixty feet beyond the second row of dots is a painted "limit line" 8' long by 1' wide referenced by a 28" cone on either end.

Procedure to Drive Course

- The training vehicle will be driven toward the dots along the long axis of the roadway.
- As the vehicle approaches the dots, the vehicle's right set of tires are placed upon the first row of dots.
- Still traveling, the vehicle's left set of tires are driven upon the second row of dots.
- Upon exiting the dots, the vehicle is driven up to and between the limit line reference cones, with the front tires brought to rest directly upon the line.

Demonstration Phase

An instructor-driven vehicle will negotiate the course, while another instructor verbalizes the demonstration.

Practical Application Phase

The student driver will negotiate the course in the prescribed manner.

Evaluation Phase

The student is evaluated on the ability to properly drive on the rows of dots.

"Y" Driveway Exercise

> ***PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.***

Materials Needed

- One law enforcement training vehicle.
- Fourteen medium 18" cones and nine 48" delineators.

Goal

The student will learn through practical application the basic movements of a vehicle both forward and reverse in a tight environmental situation.

Objectives

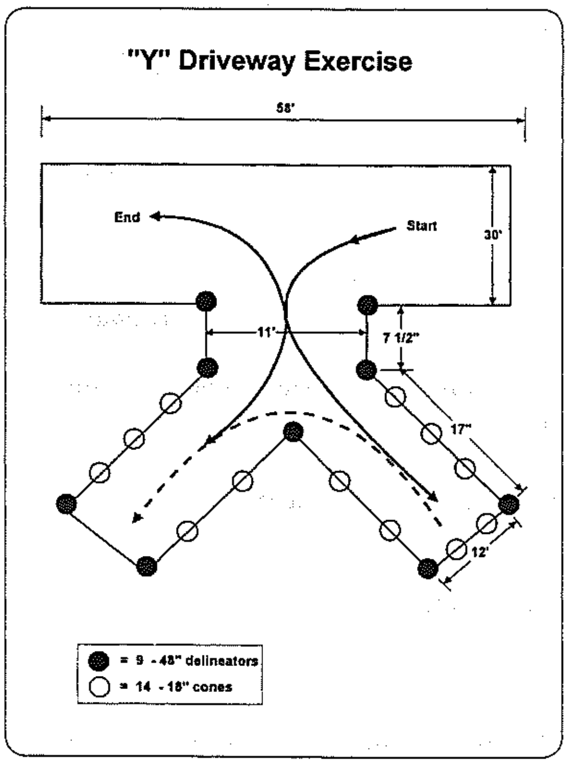
The student will successfully demonstrate how to properly maneuver a vehicle in and out of a "Y" shaped driveway or blocked "Y" alleyway where there is a minimum of space.

Introduction

- In law enforcement, a vehicle will often be driven in confined areas and it is important to safely maneuver during such circumstances.
- This training will instill confidence in the driver through successful completion of the task.
- It is essential to reduce vehicle and property damage.
- The student should learn to judge physical dimensions of a law enforcement vehicle.

Course Description

- The driving area should be on level pavement at least 58' wide and 58' long, including approach road.



Instructor's Note:
These dimensions are a guide and will vary with different size law enforcement vehicles

- The vehicle will enter the driveway area from a left turn maneuver from a roadway approximately 30' wide.
- The dimensions of the driveway are:
  - 58' across the top of the "Y."
  - 17' depth from the top of the "Y" to the entrance.
  - The mouth of the entrance of the "Y" base will be 11' wide and 7 1/2' deep.
  - The top portion of the "Y" or driveway portion will be 12' wide.
- The course will be outlined with 18" medium cones, utilizing the large 48" delineators in the most critical areas, as shown on diagram.

Procedure to Drive Course

1. The approach

- Road position on the approach road is critical before the left turning movement into the entrance of the driveway.
  - Look and plan ahead.
  - For a left turn, set up wide to the right side of the roadway.

Procedure to Drive Course (continued)

- Keep speed down to maintain and ensure control of vehicle.
  - Tight area to maneuver requires slower speeds.
  - Increased speeds will increase the radius of the turn.
- Road position while in the entrance of the driveway is also important.
  - Set up crowding wide to right, close to the delineator for a left turn into top of driveway.
  - This will minimize rear wheel cheat in left turn to delineators on left side.

2. Driving Within the "Y" Driveway

- Steering into top of the "Y" driveway from the entrance is important.
  - Avoid hitting cones at entrance.
  - Road position and placement of vehicle in top of driveway upon stopping is important. Leave room to the left of the vehicle for front-end swing while turning in reverse.
  - Vehicles should stop at top of driveway, crowding cones on left side for backing.
- Judgment of front-end distance
  - Leave sufficient room for front bumper and push bars at top of "Y."
  - Straighten the vehicle in top of the "Y" just prior to coming to a complete stop.
- Backing within top of "Y"

Procedure to Drive Course (continued)

- Look to rear at all times while backing.
- Smoothly steer vehicle straight back pivoting right rear wheel around the delineator.
- Continue backing vehicle into top of "Y" on opposite end allowing for proper road position to set up for exiting mouth of "Y."
- Vehicle should come to a complete stop, parallel with the top edge of "Y" with a sufficient margin between rear bumper and left end of "Y."

- Exiting the "Y"
    - Steering accuracy is important to allow room for rear wheel cheat while exiting mouth of "Y."
    - Avoid being too close to cones on left side.
    - Avoid excessive throttle which would widen exit path causing vehicle to strike cones on the right side.
    - Upon exiting mouth of "Y," attempt to crowd cones on right side for good road position.

Demonstration Phase

- An instructor-driven vehicle will negotiate the course emphasizing the pertinent control techniques.
- Another instructor will verbalize the demonstration.

Practical Application Phase

The student will drive the exercise as demonstrated.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Visual awareness of obstacles to rear
- Rear wheel cheat
- Front-end swing
- Use of road position

Forward/Reverse Maneuvering Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Materials Needed

- At least one law enforcement training vehicle.
- Sixty 18" cones and twelve 48" delineators.

Goal

- Demonstrate to the student the need to continually monitor all four corners of the vehicle while backing.
- Backing takes pre-planning and judgment regarding the dimensions and limitations of the vehicle.

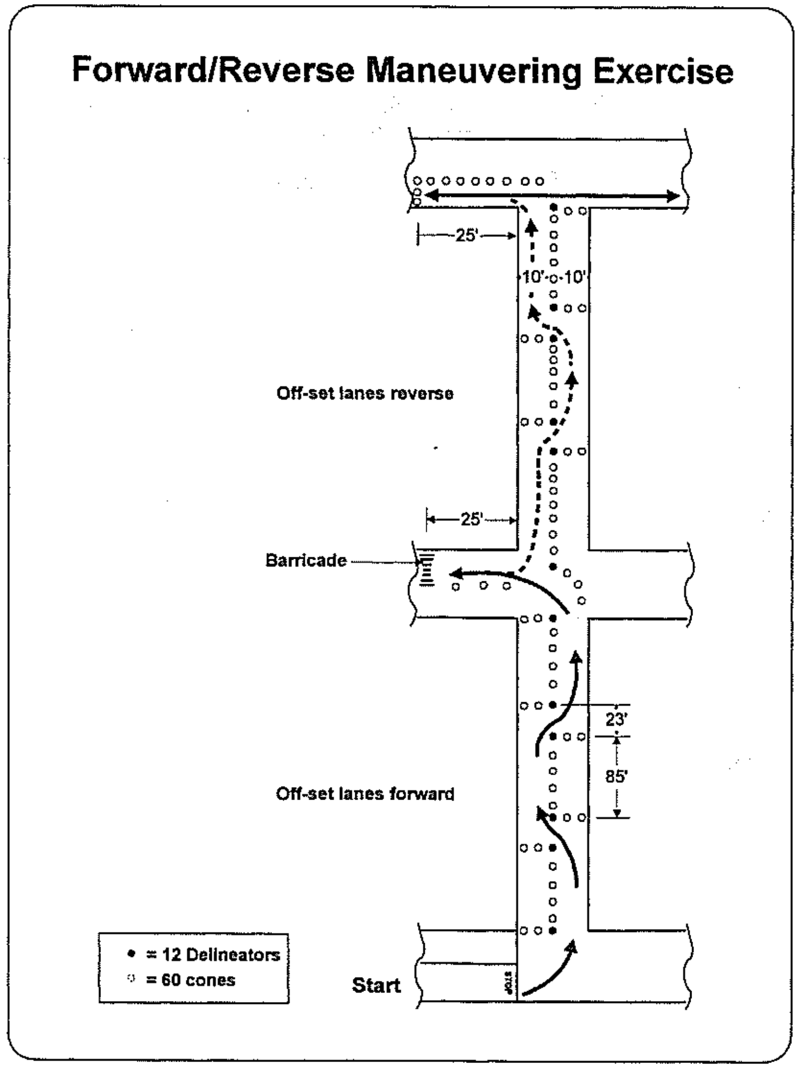
Objectives

The students will demonstrate the ability to drive forward and back up properly.

Introduction

- This exercise teaches proper road position while driving forward.
- This exercise will teach the student to properly position the vehicle while backing and learn the limitations imposed on a vehicle whose turning is determined by the trailing wheels.

Course Description



Procedure to Drive Course

The student enters in a forward direction and drives through the three offsets and makes a left turn into the parking stall. At that point the student backs out of the stall, making a right turn and continues backing through three additional offsets until backing into the stall at end of the exercise.

Demonstration Phase

An instructor will drive a vehicle through the exercise as explained in the procedure section.

Practical Application Phase

The student will drive the exercise as demonstrated.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Steering control
- Use of road position
- Rear wheel cheat
- Visual awareness of obstacles to rear
- Front-end swing

Vehicle Control Techniques Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Materials Needed

- One law enforcement training vehicle.
- Ten 28" cones.

Goal

The student will become familiar with all aspects of vehicle control techniques.

Objectives

The student will successfully demonstrate the following fundamental vehicle control techniques while negotiating the exercise:

- Steering
- Throttle application
- Braking
- Roadway position
- Weight transfer
- Speed judgment

Introduction

- Law enforcement drivers must be able to properly control their vehicles under emergency as well as routine conditions.

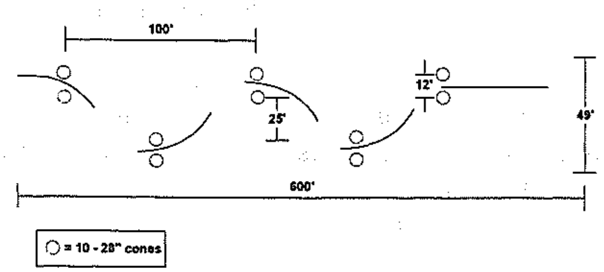
Introduction (continued)

- The course is designed to familiarize the student with the basic fundamentals of vehicle control under all conditions.
- An understanding of vehicle dynamics combined with accurate manipulation of the vehicle's controls are essential to safe vehicle operation.

Course Description

- The course occupies a level, paved, driving area 600' long and 70' wide.
- The course consists of five sets of cones, two per set, 12' apart.
- The first set of cones is placed 100' from the start of the exercise, with the remaining four sets at 100' intervals.

Vehicle Control Technique Exercise



- The second and fourth sets of cones are offset 25' from the other sets of cones to constitute an "S" configured driving line.
- The remaining 100' of driving area is utilized for braking room.

Procedure to Drive Course

- The exercise is divided into a two-phase operation. In Phase One, the vehicle is driven forward through the course. In Phase Two the vehicle is driven in reverse back through the course.
- The vehicle is driven forward at a constant speed which will allow smooth vehicle operation.
- Vehicle control techniques stressed are:
  - Speed judgment
  - Roadway position
  - Steering
  - Weight transfer
  - Braking
  - Throttle application
- At the end of the driving area, the vehicle will be brought to a complete stop stressing firm to light brake application for controlled weight transfer.
- Assuming the proper seating position, the student will back the vehicle through the course utilizing the proper control techniques. Front-end swing, rear wheel cheat and the effects of caster while backing are explained to the student driver.

Demonstration Phase

- An instructor-driven vehicle will negotiate the course both in forward and reverse.
- The students will ride as passengers in the demonstration vehicle while the instructor drives and verbalizes the exercise.
- All pertinent vehicle control techniques will be stressed and demonstrated.

Demonstration Phase (continued)

- The demonstration will be driven once at slow speeds, then at training speeds.

Practical Application Phase

- Each student will perform the exercise, both forward and reverse.
- The student driver will confirm to all objectives and techniques presented.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Speed judgment
- Brake application
- Roadway position
- Throttle application
- Steering control
- Weight transfer

Braking in a Turn Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Materials Needed

- One law enforcement training vehicle (non-ABS).
- Twenty-four 18" cones and four 48" delineators.

Goal

The student will learn to properly brake a vehicle to a complete stop while negotiating a turn.

Objectives

- The student will experience the effects of the forces at work on a rapidly decelerating vehicle in a turning maneuver, especially excessive weight transfer.
- To demonstrate loss of vehicle steering ability (loss of rolling friction) should brake lock-up occur.
- To allow the student to gain proficiency in properly braking a vehicle under emergency conditions.

Introduction

- Drivers of emergency vehicles, by necessity, will be engaged in emergency driving situations. These situations will include turning maneuvers as well as straight line driving.
- Proper emergency vehicle control techniques dictate braking prior to entering a turn for optimum vehicle stability. In reality, this may not always be possible based on circumstances confronting the driver.

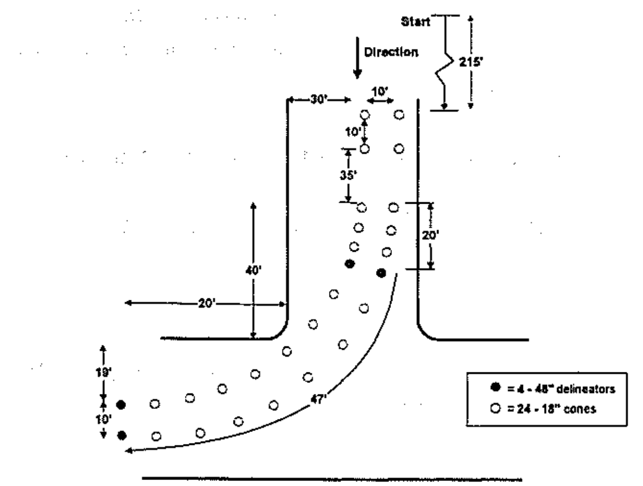
Introduction (continued)

- This exercise is designed to present the student driver with this type of situation and develop those skills necessary for proper vehicle control.

Course Description

- The course consists of:
- Straight line approach roadway - 215'.

Braking in a Turn Exercise



- A set of funneling cones - 10' x 10'.
- Entry to the turn - 35'.
- Constant radius 90° right hand turn, outlined in cones - 67' (47' + 20') x 10'.

Procedure to Drive Course

- The driver will leave the starting point and accelerate to the designated speed.
- Maintaining the desired speed, the driver will proceed through the funneling cones. This places the vehicle in the correct position for entrance into the turn.
- The driver enters the turn, maintaining speed, until the vehicle's front end reaches the designated braking point.
- The braking point is indicated by two 48" delineators, placed 20' into the turn.

Procedure to Drive Course (continued)

Instructor's Note:
This exercise can be conducted as either a right or a left turn.

- The driver will apply the necessary amount of firm brake application to bring the vehicle to a complete stop within the remaining 47' of turn area.
- The vehicle must also remain within the outlined boundaries.

Demonstration Phase

- An instructor-driven vehicle will slowly negotiate the course stressing road position, braking point, smooth brake application, and steering control.
- Another instructor will verbalize the demonstration.
- The demonstration vehicle will then negotiate the course at training speeds.

Practical Application Phase

- The student will negotiate the course, employing the pertinent control techniques.
- Initial vehicle speed is 25 MPH. This will subsequently be raised to 30 MPH and finally to 35 MPH in relation to the student's increasing ability.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Throttle application
- Steering control
- Braking application
- Collision avoidance

Controlled Speed Reverse Driving Exercise

> ***PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.***

Materials Needed

- One or more law enforcement training vehicle.
- Tires, cones, or delineators to outline the roadways and apexes. Five 48" delineators to form a serpentine.

Goal

The student will gain the knowledge and ability to drive a vehicle in reverse at moderate speeds and will understand the importance of visual awareness of objects to the rear for maximum vehicle control and safety.

Objectives

- The student will demonstrate the ability to safely and efficiently drive a vehicle backward through a marked course at a moderate speed.
- The student will understand the importance of vehicle weight transfer and its relationship to throttle and steering smoothness during turning movements when driving in reverse.
- The student will understand the term "late steering" and how it applies to driving in reverse.
- The student will demonstrate an ability to control a vehicle while driving in reverse, by coordinating smooth steering and throttle control with the proper accepted steering method.

Introduction

- Drivers of emergency vehicles are frequently required to drive their vehicles in reverse at moderate speeds with maximum control.
- The reverse driving exercise is designed to teach maximum vehicle control while driving in reverse by:
  - Smoothness and coordination of steering and throttle control.
  - Proper steering technique.
  - Correct seating position (for good visibility).
  - Roadway position.
- Common Driver Errors When Moving In Reverse
  - Late steering
    - When driving a vehicle in reverse, there is a short interval of time from when the steering wheel is first turned until the rear (leading end) of the vehicle starts to respond to that turning movement.
      - If this is not taken into consideration, the driver will tend to start the turn too late; thus, causing the driver to overcompensate the steering input in order to complete the turning movement. This causes excessive weight transfer.
      - When this occurs, most drivers will usually try to compensate by quickly turning the steering wheel in the opposite direction causing severe front-end "sway."
  - The driver needs to "point" the rear of the vehicle in the direction desired to travel.

Introduction (continued)

- Improper throttle application
  - During a turning maneuver, throttle control has a direct effect upon the steering control.
  - As throttle control (pressure) varies, so does the speed of the vehicle. The driver should maintain steady throttle pressure or use no throttle at all.
- Front-end sway
  - Front-end vehicle sway will often occur when a vehicle is being driven in reverse and becomes more exaggerated as the speed increases.
  - Swaying is mainly due to the "caster effect" on the vehicle's front wheels.
    - An automobile is designed so that the front wheels will seek a straight line when being driven <u>forward</u>.
    - This is not the case when the vehicle is being driven in <u>reverse</u>.
    - When moving backwards, the front wheels will try to turn or pivot upon their vertical axis. This turning or pivoting action will be somewhat limited by the steering mechanism and front-end components of the vehicle.
- Improper seating
  - Does not afford full unobstructed view through rear window.

Instructor's Note:
Point out that by keeping a smooth, consistent throttle, it will minimize the possibility of a loss of control through excessive weight transfer.

Instructor's Note:
Compare the front wheels of a vehicle to the caster wheels of a shopping cart or baby stroller. Explain their pivoting action.

Introduction (continued)

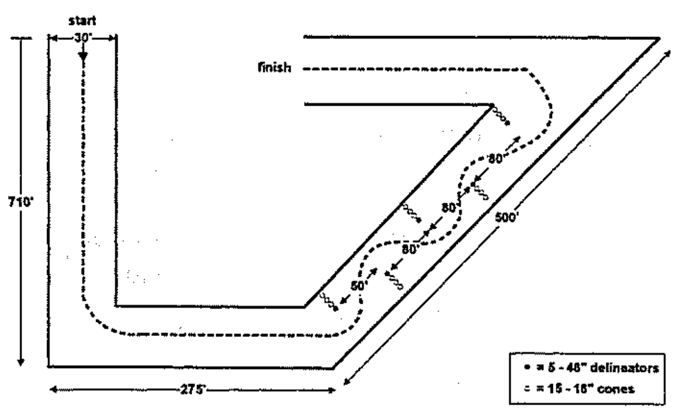
- Might cause dizziness or blackout by cutting off blood supply of carotid artery to the brain.
- Might cause severe stiffness in neck and shoulders.

- Proper seating position
    - To gain a clear and unobstructed view to the rear, (a very necessary element of vehicle control) the driver must position the body so that the driver is sitting on the right hip with the right shoulder firmly positioned into the center portion of the seat.
        - The left leg and foot can then be used as a brace to help hold the body in this position.
        - Optimum vision through the rear window is thus attained.
    - Another acceptable method is where the driver will place their right hand on the headrest of the passenger seat, look over their right shoulder and place their left hand at the top of the steering wheel. Extension of the left leg against the floor will help lift the body up to obtain maximum visibility through the rear window.

Course Description

- The exercise is on a level, paved area approximately 1485 feet long and 30 feet wide.

Controlled Speed Reverse Driving Exercise



- The first half of the course consists of a single straight lane which is 710 feet long with a 90° turn at the end.
- The second half of the course consists of a series of varied "S" turns.

Procedure to Drive Course

- This exercise is divided into two phases.
  - Phase One: Driving backward.
  - Phase Two: Driving forward.
- The vehicle will start at the end of the single straight lane. The student will properly adjust the seat and seat belt.
- At a signal from the instructor, Phase One begins.
  - The vehicle will move backwards, smoothly and quickly, accelerating to 20-25 MPH and will maintain this speed to the first turning point.

Instructor's Note:
Safety belts are adjusted to allow the driver to turn in the seat for proper vision when backing.

Procedure to Drive Course (continued)

- The student driver will apply threshold braking while the vehicle is still traveling in a straight line to reduce entry speed into the turn.
- The student will turn into and negotiate the serpentine at a constant speed commensurate with the driver's skill level.
- The student will bring the vehicle to a complete stop at the finish point.

- Phase two consists of driving the vehicle forward through the entire course to the starting point.

Demonstration Phase

- An instructor will perform two demonstration laps of the course, while another instructor explains the techniques and procedures.
- The first lap will be at very low speed demonstrating road position, braking, throttle control, and steering technique. The vehicle will then be driven forward through the course to the starting point.
- The second demonstration lap will be like the first, but will be driven at "training speeds."

Practical Application Phase

- An instructor will perform two demonstration laps of the course, while another instructor explains the techniques and procedures.
- The first lap will be at very low speed demonstrating road position, braking, throttle control, and steering technique. The vehicle will then be driven forward through the course to the starting point.
- The second demonstration lap will be like the first, but will be driven at "training speeds."

Evaluation Phase

- The student will drive the course, both forward and reverse, utilizing the demonstrated techniques.
- Initial speeds will be relatively slow, concentrating on proper technique.
- Speeds will be increased relative to the student's performance until "training speeds" are achieved.

Controlled Braking Exercise

> ***PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.***

Materials Needed

- Law enforcement training vehicle(s).
- Thirty 18" traffic cones and sixteen 48" delineators.
- Cones.
- Delineators.
- Three (3) traffic signal lights (optional)
- Light control box (optional).
- Trip device (optional).

Instructor's Note:
In lieu of the traffic lights, you may ride with the student and give voice commands or use a radio and call directions.

Goal

To teach the student to properly brake a vehicle in a turning maneuver and come to a complete stop within the imposed boundaries.

Objectives

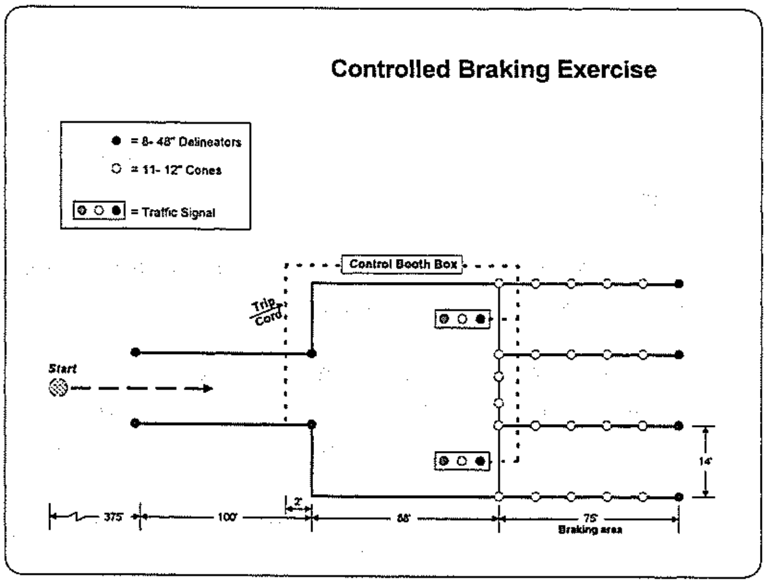
- To allow the student to experience the effect of the forces at work on a rapidly decelerating vehicle in a turning maneuver; especially excessive weight transfer.
- To demonstrate loss of steering ability (loss of rolling friction) should brake lock-up occur in a non-ABS equipped vehicle.
- To allow the student to gain proficiency in properly braking a vehicle under emergency conditions.

Introduction

- Drivers of emergency vehicles will engage in emergency driving situations. These situations will include turning maneuvers as well as straight line driving and reaction to changing situations.
- Proper vehicle control may require straight line braking prior to entering a turn.
- Straight line braking may not always be possible based on circumstances confronting the driver.
- This exercise is designed to present the student with this type of situation and develop those skills necessary for proper vehicle control.

Course Description

The course is on a level, paved area approximately 750' x 42'. It consists of:



Controlled Braking Exercise

- A 375-foot starting and acceleration area.
- Three approach lanes that are 14 feet in width and 100 feet in length.
- A lane change zone that is 88 feet in length and 42 feet wide.
- Three traffic lanes that are each 14 feet wide and 75 feet in length, with a two-phase traffic signal lights suspended over the entrance to each lane.

Course Description (continued)

- The traffic lanes are lined with cones.
- A trip device at the beginning of the 88-foot lane change zone for traffic signal light change activation.
- Light control box for traffic signal light operation.
- Center lane is blocked at the entrance allowing access to only the right and left lanes.
- Two delineators set 10 feet from the lane entrances to designate a braking point.

Procedure to Drive Course

- The student will drive the exercise at the following speeds:
  - 30 MPH
  - 35 MPH
  - 40 MPH
- When at the starting point and presented with three green lights, the student will accelerate up to the desired speed.
- This speed will be maintained until the vehicle passes the trip device, causing the lights to change.
- The student will release the throttle, identify the location of the green light, and steer the vehicle into the appropriate lane, while braking at the same time.
- At the end of the lane of travel, the vehicle will be brought to a complete stop, utilizing threshold braking before exiting the lane.

Demonstration Phase

- An instructor will slowly negotiate the course stressing road position, braking point, smooth brake application and steering control.
- Another instructor will verbalize the demonstration.
- The demonstration vehicle will then negotiate the course at training speeds.

Practical Application Phase

The student will negotiate the course, employing the pertinent control techniques.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Physical reaction
- Vehicle control
- Brake application
- Collision avoidance
- Steering control

Collision Avoidance Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Materials Needed

- Law enforcement training vehicle(s).
- Cones
- Delineators.
- Three traffic lights (optional)
- Light control box (optional)
- Trip device (optional)

Instructor's Note:
In lieu of the traffic lights, you may ride with the student and give voice commands or use a radio and call directions.

Goal

The student is taught to control a vehicle smoothly, into an evasive maneuver, to avoid an obstacle rather than braking and skidding out of control.

Objectives

- To test driver's reaction and coordination of physical movements.
- To point out hazards of quick turning movements, and/or improper use of brakes.
- To demonstrate weight transfer of a vehicle and the affect of steering control and proper throttle application.
- To emphasize that reaction distances increase as the speed of the vehicle increases.

Objectives (continued)

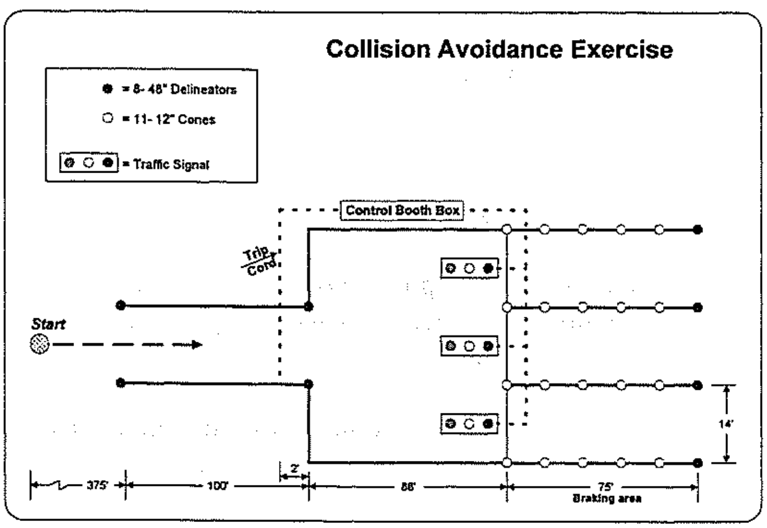
- To emphasize to the student that more steering is required as the speed increases.
- To train the student in a method of avoiding a traffic collision other than an emergency stop.

Introduction

Drivers of emergency vehicles are frequently required to execute quick turning movements or lane changes. It is imperative that they have knowledge of their personal reaction time at given speeds and know the vehicle's limitations. The collision avoidance exercise is designed to simulate an obstacle on a highway requiring the driver approaching the obstacle to quickly and skillfully change lanes to avoid a collision.

Course Description

- The course is on a level, paved area approximately 750' x 42'. It consists of:
- A 375-foot starting and acceleration area.



- Three approach lanes that are 14 feet wide and 100 feet long.
- A lane change zone that is 88 feet long and 42 feet wide.
- Three traffic lanes that are each 14 feet wide and 75 feet in length, with a two-phase traffic signal suspended over the entrance to each lane.

Course Description (continued)

- Three approach lanes that are 14 feet wide and 100 feet long.
- A lane change zone that is 88 feet long and 42 feet wide.
- Three traffic lanes that are each 14 feet wide and 75 feet in length, with a two-phase traffic signal suspended over the entrance to each lane.
- The traffic lanes are lined with cones.
- A braking and turning area of 112 feet.
- A trip device at the beginning of the 88-foot lane change zone for traffic signal light change activation.
- Light control box for traffic signal operation.

Procedure to Drive Course

- The student will drive the exercise at the following speeds:
    - 30 MPH
    - 35 MPH
    - 40 MPH
- When at the starting point and presented with three green lights, the student will accelerate up to the desired speed.
- This speed will be maintained until the vehicle passes over the trip cord causing the lights to change.
- The student will release the throttle, identify the location of the green light, and steer the vehicle into the appropriate lane.

Procedure to Drive Course (continued)

- At the end of the lane of travel, the vehicle will be brought to a complete stop, utilizing threshold braking.

Demonstration Phase

- An instructor will drive a vehicle as explained in the "Procedure to drive the course" section.
- Another instructor will verbalize the demonstration.

Practical Application Phase

The student will demonstrate the techniques and objectives as presented.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Steering control
- Throttle application
- Smoothness and coordination
- Physical reaction
- Vehicle control
- Brake application

Square Corner Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Materials Needed

- One law enforcement training vehicle (ABS equipped)
- Driving surface with multiple marked 90-degree turns
- One apex marker per turn (cone or tire)
- Radio communication between vehicles desirable

Goal

- The student will become proficient at applying the fundamentals of vehicle control while approaching, turning through and exiting a 90° corner.
- The student will become familiar with the sensation of ABS activation prior to steering through a 90° turn.

Objectives

- The student will become proficient at applying the fundamentals of vehicle control while approaching, turning through and exiting a 90° corner.
- The student will become familiar with the sensation of ABS activation prior to steering through a 90° turn.

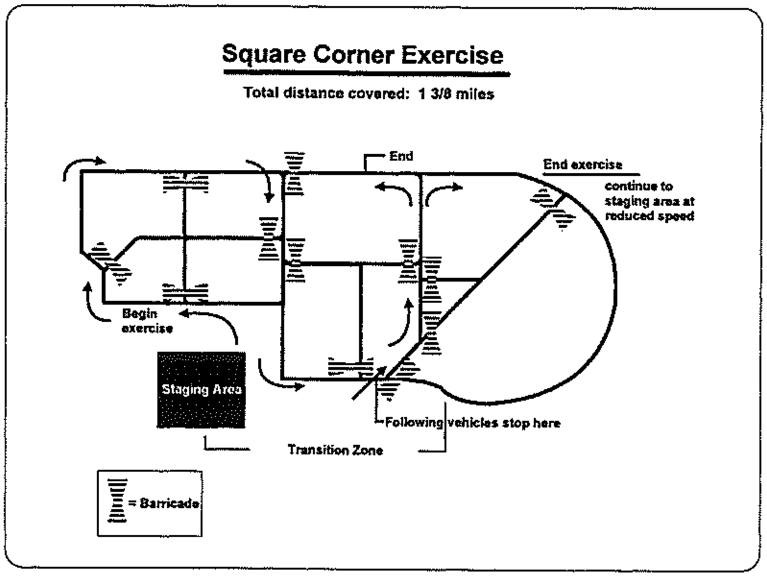
Introduction

This exercise will familiarize the student with the fundamentals of vehicle control. This exercise is also designed to allow the student to drive several similar corners so that the student may become proficient at applying the vehicle control techniques.

Instructor's Note:
The Insurance Institute for Highway Safety recently conducted studies on the impact of the ABS system on collision reduction. The studies found that the system has not been as effective as anticipated in collision reduction. The Institute concluded that the main reason is: "drivers are, all too often, unfamiliar with the capability and operation of ABS." The students will clearly see during a panic stop situation, that they can still steer to avoid colliding with a vehicle or object while the ABS is properly applied.

Course Description

- The course should be laid out so as to closely duplicate 90° corners found in typical street intersections.



- Corners should be marked with cones, surplus tires or painted lines so the student can easily recognize the width of the available roadway during the entry and exit phases of a turn and be able to clearly see the apex of the turn. The course need not be a closed loop. A non-marked transition zone may be incorporated to get the student from the exit of the course back to the beginning. This transition zone may be desirable as the instructor can use this area to critique the student between sets of corners.

- The course should be designed so that the student can drive between five and ten corners in close succession then have a clear zone in which the instructor may critique the student's performance. Corners should be laid out so that they may be driven safety at 20-25 MPH.

- The final straightaway at the end of the exercise will end with the option of making a right or left 90° turn.

Procedure to Drive Course

- Prior to actually driving the course, the instructor should review the fundamentals of vehicle control with the students and emphasize the need to coordinate the control functions to produce driving smoothness necessary for vehicle control. The instructor will also emphasize the necessity to maintain steady, firm brake pressure to allow the ABS system to work.

- The instructor is seated in the right front seat of the primary vehicle with a student driver and a student passenger. Additional students will drive additional vehicles and follow the primary vehicle through the course.

- The instructor directs the student through the course with any additional student vehicles following at a safe distance. On the final straightaway, the additional students exercise ends. Only the primary vehicle will continue to finish the final phase of the exercise while incorporating ABS application and then steering the vehicle.

- The other students will wait until the primary vehicle is finished and then will join in following behind the primary vehicle back to the starting point.

- Only the primary vehicle with an instructor present will perform the final phase of the exercise. It is important, for the purpose of safety, that the instructor be present with the student during ABS application in conjunction with steering.

- During the approach phase, the instructor will emphasize the use of proper roadway position, and proper brake application.

- During the cornering phase, the instructor should emphasize the smooth transition from braking to input of steering into the apex point.

Procedure to Drive Course (continued)

- During the exit phase, the instructor emphasizes the controlled recovery of steering to the outside of the roadway and the smooth transition from steering to throttle.
- During the sections between corners, the instructor should emphasize early recognition of road position for the approaching corner and extending the student's vision from just in front of the vehicle down the road to the next corner. The instructor should also use this period to briefly critique the student's performance.

Demonstration Phase

- The demonstration is conducted with the instructor driving the primary vehicle and the students as passengers.
- The demonstration consists of three laps around the course.
- The first lap is driven slowly with the instructor stopping at various points to explain the application of the various techniques.
- The second lap is driven beginning at a slow speed that is gradually increased to the student's training speed. The instructor should emphasize the application of proper techniques at the increased speed.
- The final lap begins at the student's practice speed and is increased to near the vehicle's maximum speed to demonstrate the application of control techniques at higher speeds. The instructor will apply the ABS and steer the vehicle in a turn at the end of the final demonstration lap.

Instructor's Note:
The instructor must caution students that speeds should not be increased if it causes students to exceed their ability to safely control the vehicle.

Practical Application Phase

- The primary vehicle will contain the instructor, student driver and student passenger. Additional students will follow in other vehicles.
- The student should drive the course three to five laps with the instructor.
- Speeds for the first lap should be slow. The instructor should insure that the student is properly controlling the vehicle prior to allowing the student to increase speed.
- Student speeds should be such that the student must brake the vehicle and control speed prior to entering a turn.
- The students should be encouraged to explore their limitations and experience vehicle control at speeds nearing the limit of adhesion. However, students should not be encouraged to drive faster than their skill level will allow.
- At the conclusion of a set of laps, the students should rotate between the different positions within a vehicle or within different vehicles. This will allow a student to drive with and without direct instruction and observe others under direct instruction.

Instructor's Note:
Emphasize to students that are not in the primary vehicle that although they are not under direct instruction, they should still attempt to apply all of the techniques being taught and that they are still being observed by the instructor.

Evaluation Phase

The square corners exercise is designed as a practice exercise and will not be graded. However, it could easily be utilized to evaluate control techniques. Each student will be critiqued immediately following driving under direct instruction. Students will be given a group critique/debrief at the conclusion of the exercise. The instructor should emphasize the need for vehicle control through the application of basic control techniques and also emphasize the importance of using the ABS correctly.

Skid Pan Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.

Materials Needed

- Law enforcement training vehicle(s)
- Smooth driving surface
- Lubricant

Goal

The student will gain the necessary skill and knowledge for regaining and maintaining vehicle control after experiencing a variety of skids.

Objectives

- The student will demonstrate how steering control is lost during a four-wheel braking skid and how to regain control of the vehicle.
- The student will demonstrate the loss of vehicle control encountered in a "spin out."
- The student will demonstrate the ability to control a vehicle that is in a rear wheel or power skid (oversteer).
- The student will demonstrate the ability to regain control of a vehicle that is in a front-wheel skid (understeer).

Introduction

- Drivers of emergency vehicles may be required to safely regain control of the vehicle while experiencing various types of skids. Inability to control these skids could result in sliding off the road, spinouts and traffic collisions.
- Most skids occur as a result of:
  - Excessive speed
  - Improper brake application
  - Improper throttle application
  - Improper steering control
  - Excessive weight transfer
  - Poor road conditions, i.e., wet, sandy, oily, icy, etc.
- The skid pan is designed to simulate at slower speeds (for safety) the conditions that are experienced at higher speeds. By reducing the coefficient of friction between the tires and roadway, the various forces applicable to high-speed emergency driving become more readily apparent and may be experienced at low speeds with no hazards.
- Drivers must be able to regain/maintain control after experiencing different types of skids, rather than completely losing control of the vehicle.
- Some common errors that skid control training will overcome:
  - As the vehicle begins to skid, the driver "panics" and locks the brakes, resulting in a loss of rolling friction and steering control.

Introduction (continued)

- As the vehicle begins to skid, the driver "panics" and overcorrects for the skid, causing a secondary skid and possibly a "spin out."
- As the vehicle begins to skid, the driver does not respond properly and:
  - Either fails to countersteer in a timely manner, or
  - Under corrects, or
  - Uses improper throttle application, or
  - Some combination of all of the above.

- Types of skids and control techniques
  - Four-wheel locked skid
    - While a vehicle is in a four-wheel locked skid, the driver will <u>not</u> have steering control due to loss of rolling friction. The vehicle will travel in a straight line unless acted upon by some external force.
      - Rolling friction occurs when the tires are rotating and the traction between the tire tread and the road surface allows the driver to exert directional control over the vehicle by using the steering wheel.
      - Sliding friction (loss of rolling friction) occurs when the tires stop rotating and the traction between the tire tread and the road surface is lost, thereby causing a loss of directional control.
      - To regain steering control of a vehicle in a four-wheel locked skid, it is necessary to recover rolling friction. This is accomplished by releasing brake pressure

Introduction (continued)

to the point where the wheels begin to roll.

- Front-wheel skid (Understeer): Occurs when adhesion between the front tires and the road surface is severely reduced or lost, and the vehicle fails to respond to the steering.
    - Some conditions that cause front-wheel skid are:
        - Excessive speed.
        - Tire condition (air pressure and tread depth).
        - Surface condition of roadway, i.e., wet, oily, sandy, icy, etc.
    - To recover steering control of a vehicle in a front-wheel skid, it is necessary to reduce or release throttle, allowing weight to transfer to the front wheels assisting the tires to regain traction.
    - Good speed judgment is necessary to prevent the above type skid.
- Rear wheel skid (Oversteer)
    - Occurs when the rear tires lose traction with the road surface and the rear of the vehicle slides out. Some conditions causing a rear wheel skid are:
        - Improper throttle application
        - Rough or "jerky" steering
        - Improper speed
        - Excessive weight transfer

Introduction (continued)

- Improper brake application
- Tire condition and roadway surface

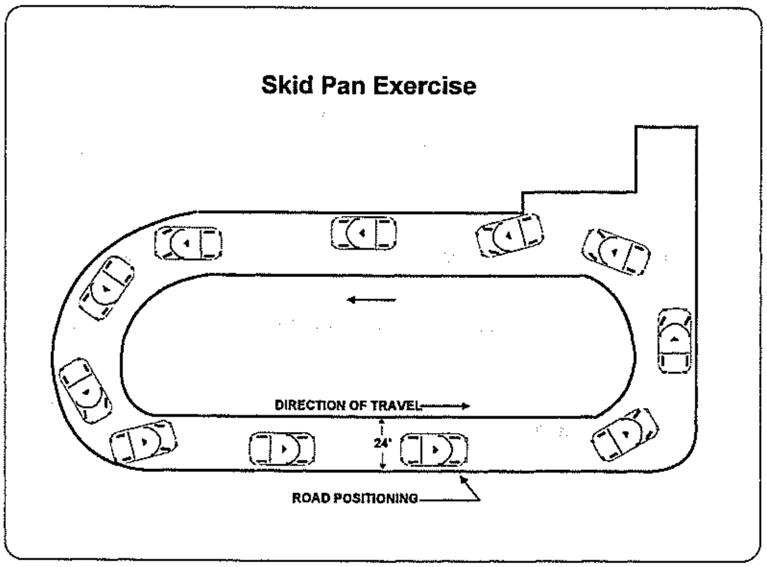
- To recover control of a vehicle that is in a rear wheel skid:
  - Release throttle
  - Look in the desired direction of travel
  - Turn into the direction of the skid
  - The amount of countersteering necessary to correct for the skid must be equal to the degree of skid.
    - When making the correction, if the driver fails to respond to the skid properly, either in timing (too late) or in the degree of correction, the vehicle will continue to skid out of control.
    - When making the correction, and the driver steers more than the degree of skid (overcorrect), the primary skid will stop. The vehicle will then experience a severe weight transfer. This may induce a secondary skid in the opposite direction.
    - A variation of throttle pressure may be needed to control the skid. This may involve maintaining steady throttle, increasing throttle, or decreasing throttle pressure.

Instructor's Note:
Once the vehicle swings out of line approximately 25 degrees, generally steering correction can no longer be made.

Instructor's Note:
The secondary skid occurs in the opposite direction of the primary skid and sometimes occurs suddenly, due to late removal of countersteering and the severe unloading of springs (weight transfer), that maintaining vehicle control may be impossible.

Course Description

- The skid pan is a large "D" shaped, smooth concrete track, approximately one-half the size of a football field.



  - It is approximately one-eighth mile in circumference, (684 feet).
  - The width of the concrete portion varies from 24 feet to 32 feet.
  - The turns at each end of the skid pan are either decreasing radius curves (more severe) or increasing radius curves (less severe), depending on the direction of approach.

- Lubricant is applied to the training surface to reduce the coefficient of friction.
- Training vehicles are equipped with special treaded tires to further reduce the coefficient of friction.
  - Slightly treaded ("cheater slicks") front tires.
  - Completely smooth ("slicks") rear tires.

Procedure to Drive Course

- The skid pan exercise is driven at varying speeds from 8-20 MPH, slow at beginning - faster as proficiency increases.
- The vehicle(s) should be driven in "low" gear.
- The vehicle(s) will continue in a constant "free flow" pattern, proceeding in the same direction. At no time shall there be more than one vehicle in any given turn.
- Safety belts shall be worn by driver and passengers.
- Proper road position is necessary to best utilize the skidding areas.
    - Approach the turns on the outside edge of the track.
    - Using the proper steering technique, turn towards the inside edge of the track.
    - When the vehicle is approximately one-third of the way into the turn, accelerate to "break" rear tire traction.
        - The resulting rear wheel skid will be controlled and maintained through the remainder of the turn.
        - After the skid has been controlled, allow the vehicle to "drift" towards the outside of the turn.
    - The vehicle will exit the turn on the extreme outside edge of the track.
- Prior to completing the exercise, the student will be required to place the vehicle in the following types of skids:

Procedure to Drive Course (continued)

- Four-wheel brake lock-up.
- Uncontrolled front wheel skid (understeer).
- Uncontrolled rear wheel skid (oversteer).

- The skid pan will be driven in both directions to gain experience for right and left turning movements.

Demonstration Phase

Various types of skids are demonstrated with <u>and</u> without proper corrective techniques.

- The vehicle is placed in a four-wheel locked skid, demonstrating the loss of "rolling friction" and steering control. The steering wheel is turned left and right, however, the vehicle continues to skid in a straight line.
- The vehicle will again be placed in a four-wheel locked skid with the steering wheel turned to either the extreme right <u>or</u> left.
  - Rolling friction and steering control will then be recovered by releasing the brakes.
  - The vehicle responds to the steering in the direction the front wheels are pointed.
- A turn is initiated and excessive throttle is applied causing a rear wheel skid. Counter steer in the direction of the skid, however, the counter steer will be <u>late</u> and in an insufficient amount for the skid, allowing the vehicle to "spin out."
- On the last demonstration, a turn is initiated and excessive throttle is applied causing a rear wheel skid. Steering and throttle are then coordinated to maintain control of the vehicle and negotiate the turn properly.

Instructor's Note:
Emphasize that smoothness and coordination of steering and throttle is imperative for maximum vehicle control. Point out the road position used to best utilize the skid surface of the track.

Practical Application Phase

- Each student will drive around the skid pan track in <u>each</u> direction.
- The student will experience the following when loss of control is due to:
  - Braking, the driver must release the brakes to regain control through rolling friction.
  - Front wheel skid, the driver must release or reduce throttle and transfer weight to the front wheels to increase traction for steering control.
  - Rear wheel skid, the driver must turn in the direction of the skid, coordinating steering and throttle to maintain vehicle control.

Evaluation Phase

Students will be evaluated on performance in the following areas:

- Steering control
- Throttle application
- Smoothness and coordination
- Roadway position
- Speed judgment
- Brake application

Skid Recovery and Braking Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Materials Needed

- One or more law enforcement training vehicles.
- Eleven 28" cones.
- One 12" cone.
- Fire hoses or other provisions to cover the driving area with water.

Goal

- The student will gain the skill and necessary knowledge for regaining and maintaining control of a vehicle in a skidding situation.
- The student will learn to apply the brakes properly on a wet surface.

Objectives

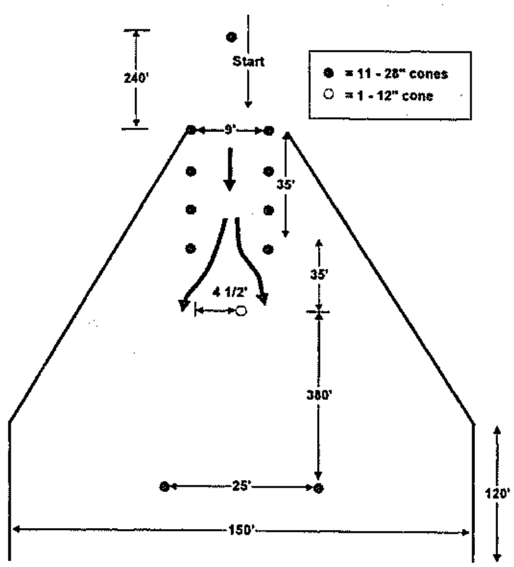
- To teach control of a vehicle that is skidding by using proper countersteering techniques.
- To allow the student to experience the effects on a vehicle during multiple slides, i.e., primary and secondary.
- To teach proper brake application on wet or slippery pavement.
- To experience the consequences of improper throttle control in a slide situation.

Introduction

- Drivers of emergency vehicles will sometimes be faced with adverse road and weather conditions and possibly the loss of vehicle control due to skidding/sliding.
- This exercise is utilized to place the student in a potentially "out-of-control" situation in a safe training environment.
- This will enable the student to repeatedly exercise those techniques for regaining vehicle control.
- The student may be exposed to the skid pan exercise prior to this course to develop countersteering techniques at lower training speeds.

Course Description

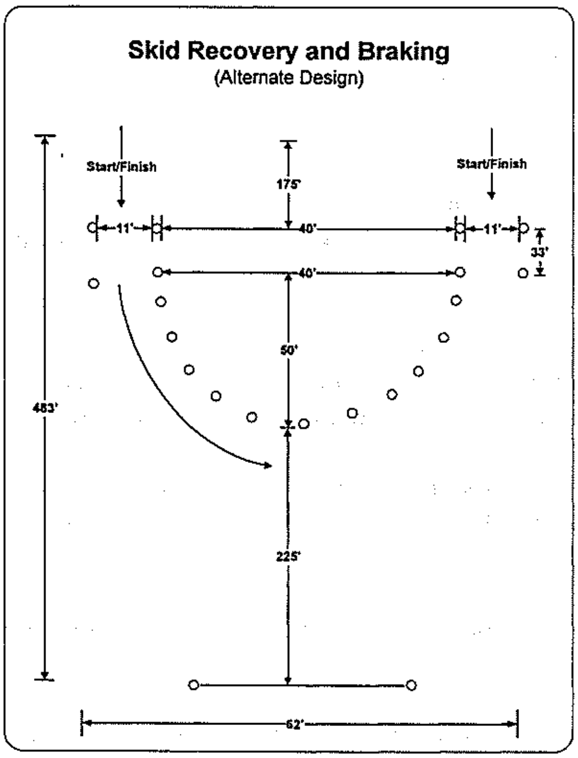
Skid Recovery and Braking Exercise



- The course area is basically triangular in shape, with the vehicle entering at the narrow point and driving into a gradually widening area.
- The driving area is surfaced with densely packed "playground aggregate" asphalt to reduce the coefficient of friction. It is approximately 750' long and 150' wide at its widest point.
- The approach lane, turning point, and sliding and recovery areas are kept layered with water to enable the training vehicle to easily begin sliding.

Course Description (continued)

The following diagram shows an Alternate Design for the Skid Recovery and Braking Exercise.



Procedure to Drive Course

- The route of travel is:
  - From the starting cone.
  - Through the approach lane of cones.
  - Left or right turn about the turning cone.
  - Through the skid and recovery area.
  - Through the finish gate.

Procedure to Drive Course (continued)

- The student will drive at designated increasing speeds commensurate with increasing expertise, until the final training speed in attained.

Demonstration Phase

An instructor will negotiate the course at a moderate speed while another instructor explains the driving techniques.

Practical Application Phase

- While at the starting point, the student will be advised of the desired speed and direction of travel around the turning point.
- The student will leave the starting point and accelerate up to the designated speed. This speed will be maintained into the approach lane of cones.
- Exiting the approach lane, the student will steer the vehicle around the turning cone(s) in the designated direction.
- This turning maneuver will usually place the vehicle in a slide.
- The student will now release and stay off the throttle.
- The student drives the vehicle through the skid and recovery area, compensating for the vehicle's sliding motions by smooth, timely countersteering.
- As the student approaches the finish gate, and has recovered from the slide, the student will bring the vehicle to a complete stop in a straight line.
- The course will be negotiated at a speed that will allow a skid to occur (approximately 25 MPH).

Evaluation Phase

The students will be evaluated on performance in the following areas:

- Steering control
- Throttle application
- Smoothness and coordination
- Speed judgment
- Brake application

Limited Area Pursuit Driving Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Materials Needed

- One law enforcement training vehicle (with radio communication).
- Suspect vehicle (marked or unmarked law enforcement training vehicle).
- Two or more "citizen" vehicles (marked or unmarked law enforcement training vehicle).
- Cones and delineators.
- Safety helmets.

Goal

- The student will experience the difficulty of pursuing a suspect while maintaining control of their vehicle, being alert to hazards and managing the affects of siren syndrome.
- The student will demonstrate the ability to drive and communicate over the radio when appropriate.

Objectives

- The student will learn how to pursue a suspect while maintaining proper distance, throttle, braking and steering techniques, and be able to recognize hazards during the pursuit and react accordingly.

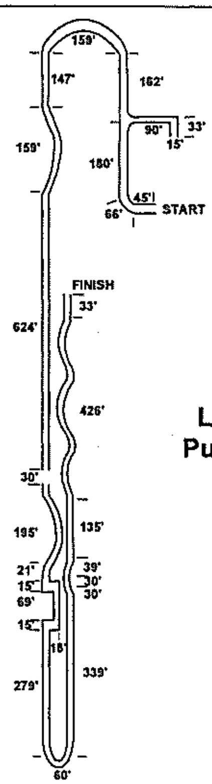
Objectives (continued)

- The student will be introduced to the stresses involved in pursuit situations, and learn to safely control the vehicle.

Introduction

- This exercise is used to demonstrate the inherent difficulty and danger of a pursuit as well as to teach techniques which will improve the student's driving ability.
- The exercise relates to real job performance in that it is something that law enforcement officers may experience.

Course Description



Limited Area Pursuit Driving
(approx. 600')

The area to be used for this exercise should be an asphalt or concrete surface with minimal obstructions, i.e., poles, trees, buildings, etc.

Procedure to Drive Course

- The student will begin pursuit of the "suspect" on a pre-determined signal and continue the pursuit to the termination point.
- The student should not pass a citizens' vehicle on the right.
- The student will maintain a proper distance between the law enforcement vehicle and the "suspect's," yet at the same time try not to let the suspect vehicle "lose" the student.

Demonstration Phase

- The instructor should advise the student that an instructor will be riding with the student, and that there will be citizen vehicles which will create interference.
- The control techniques required to perform this exercise are braking, throttle control, steering, road position and judgment.

Practical Application Phase

- The student will properly complete one pursuit scenario.
- During the exercise, the student will be required to make radio transmissions while driving the vehicle.
- The student, on the next pursuit, may ride as a passenger in the suspect vehicle to experience the pursuit from another perspective.
- The student will identify the hazards of pursuit situations and the importance of utilizing proper judgment for safety.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Brake application
- Steering control
- Throttle application
- Roadway position
- Speed judgment
- Radio procedure
- Use of siren
- Performance under stress

City Street Hazard Complex Exercise (Pursuit Driving)

> ***PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.***

Materials Needed

- One law enforcement training vehicle (with radio communication).
- Suspect vehicle (marked or unmarked law enforcement training vehicle).
- Two or more "citizen" vehicles (marked or unmarked law enforcement training vehicle).
- Cones and delineators.
- Safety helmets.

Goal

- The student will experience the difficulty of pursuing a suspect while maintaining control of their vehicle, being alert to hazards and managing the affects of siren syndrome.
- The student will demonstrate the ability to drive and communicate over the radio when appropriate.

Objectives

- The student will learn how to pursue a suspect while maintaining proper distance, throttle, braking and steering techniques, and be able to recognize hazards during the pursuit and react accordingly.

Objectives (continued)

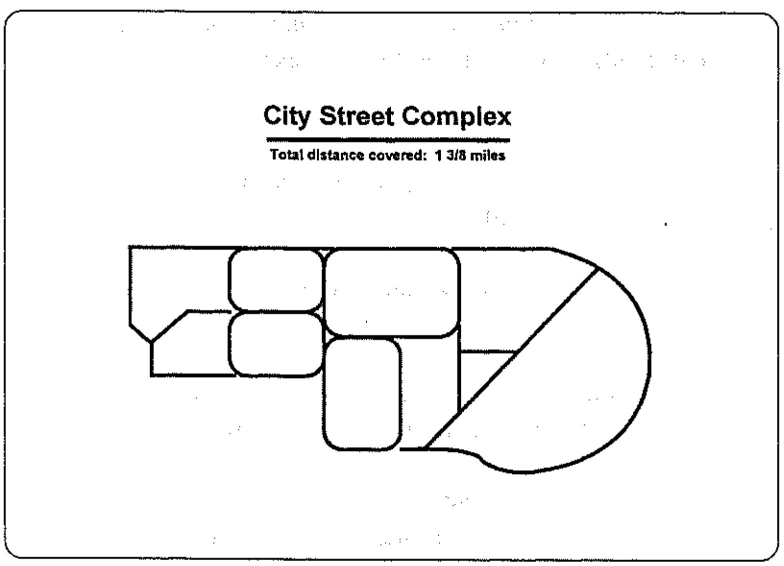
- The student will be introduced to the stresses involved in pursuit situations, and learn to safely control the vehicle.

Introduction

- This exercise is used to demonstrate the inherent difficulty and danger of a pursuit as well as to teach techniques which will improve the student's driving ability.
- The exercise relates to real job performance in that it is something that law enforcement officers may experience.

Course Description

- The pursuit course covers an area 1,200 feet long and 750 feet wide. The course consists of simulated streets which are marked by traffic cones and old automobile tires. Street widths vary from 20 to 40 feet. The course contains all types of curves and intersections. The course is paved with asphalt.



- The course is equipped with radio check points in the form of number signs mounted on delineators, strategically located about the area.

Procedure to Drive Course

- Two law enforcement training vehicles are utilized, both having special safety equipment, including roll bars. Students and instructors will wear safety helmets and be secured by the use of safety belts and shoulder harnesses.
- One instructor plays the role of the "suspect" with a student as a passenger in one of the training vehicles. A second instructor will be the passenger in the other vehicle with a student as the driver.
- The student who is driving and is in pursuit of the "suspect" vehicle will be required to effectively operate the vehicle's emergency equipment and broadcast at radio check points.
- Should the student experience any difficulty, the passenger/instructor will have some control of the vehicle through the use of the auxiliary brake and ignition kill switch.

Demonstration Phase

The students will be given an on-site explanation of the course and procedures utilized to drive the exercise.

Practical Application Phase

- The student will engage in both a practice and an evaluated pursuit.
- The route used is preplanned and is the same for each student.
- The student will pursue the instructor-driven vehicle utilizing the prescribed driving techniques.
- During this exercise, the student will be required to make radio transmissions while driving the vehicle.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Brake application
- Steering control
- Throttle application
- Roadway position
- Speed judgment
- Radio procedure
- Use of siren
- Performance under stress

"Cold Pursuit" Driving Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.

Materials Needed

- Two law enforcement training vehicles (with radio communication).
- Stop watch.
- Safety helmets.

Goal

The student will be involved in a pursuit driving situation, without prior instruction in vehicle control techniques.

Objectives

- To evaluate the student's existing driving ability.
- To emphasize the limitations of the student.
- To emphasize the limitations of the vehicle.
- To stress the importance of skillful driving so that the student becomes more aware of the necessity for safety.
- The student will be introduced to pursuit situations, maintaining self-control and safely controlling the vehicle.

Introduction

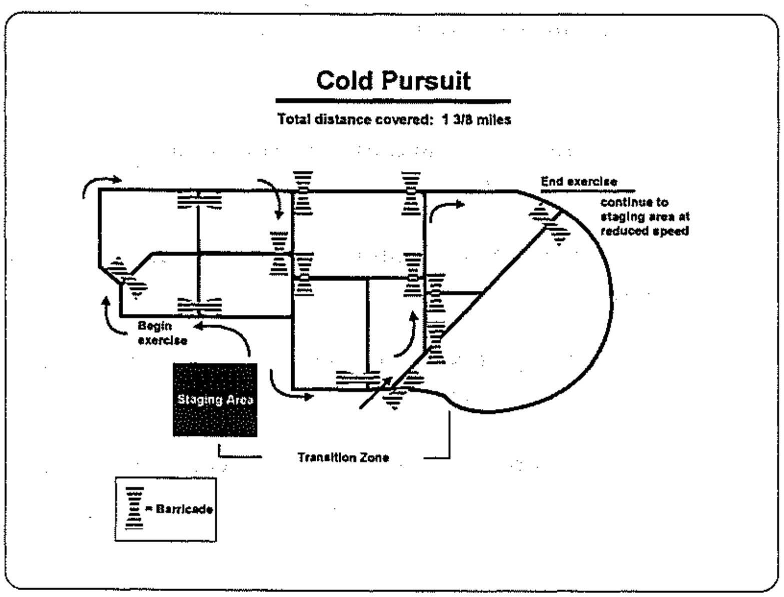
- This exercise is employed as an introduction to the driver training program.

Introduction (continued)

- The student will demonstrate driving skill level by pursuing an instructor through the course. This is done prior to any instruction in proper vehicle control techniques.
- The exercise is utilized to gauge the student's abilities as well as weaknesses.

Course Description

- The pursuit course covers an area 1,200 feet long and 750 feet wide. The course consists of simulated streets which are marked by cones and tires. Street widths vary from 20 to 40 feet. The course contains many types of curves and intersections. The course is paved with asphalt.



- The course is equipped with radio check points in the form of number signs mounted on delineators strategically located about the area.

Procedure to Drive Course

- One instructor plays the role of the "suspect" with a student as a passenger in one of the training vehicles. A second instructor will be the passenger in the other vehicle with a student as the driver.

Procedure to Drive Course (continued)

- The student who is driving and is in pursuit of the "suspect" vehicle will be required to effectively operate the vehicle's emergency broadcast at radio check points.
- Should the student experience any difficulty, the passenger/instructor will have some control of the vehicle through the use of the auxiliary brake and ignition kill switch.
- The exercise will be timed. The time will be recorded for future reference in regard to the student's progress in the program.

Demonstration Phase

The students will be given an on-site explanation of the exercise and procedures to drive the course.

Practical Application Phase

- The student will engage in a pursuit of an instructor with the completion time recorded.
- The route used is preplanned and is the same for each student.
- While driving the vehicle, the student will be required to make radio transmissions at appropriate times.
- Upon completing the course as a driver, the student will ride in the instructor-driven vehicle as a passenger.
- The instructor will emphasize the hazards related to pursuit situations and the importance of utilizing proper judgment for officer and public safety.

Evaluation Phase

- The student is not graded on the exercise, however, they are being critiqued.
- Driving time is recorded, along with any noted deficiencies in vehicle control techniques.
- This information is used for comparison data against the student's grade in this exercise, which is done at the end of the class.

Precision Driving Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Materials Needed

- One or more law enforcement training vehicles (with radio communication).
- Safety helmets.

Goal

- The student will be exposed to emergency vehicle operation at varied speeds.
- The student will operate the vehicle in an emergency response mode, realizing both driver and vehicle limitations.

Objectives

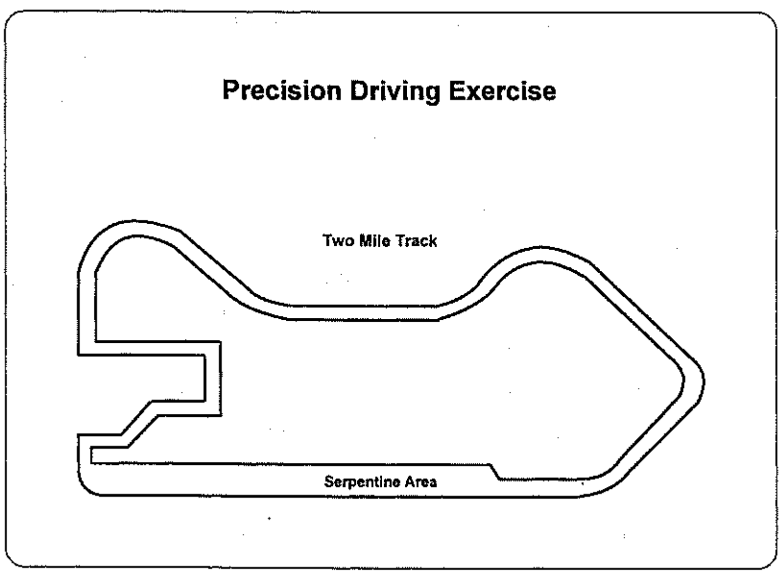
- To train the student in the basic techniques of performance driving.
- Emphasize the need for a student to know their own as well as the vehicle's limitations.
- Evaluate judgment, knowledge, skill and aptitude.
- Develop smoothness, coordination and discipline in driving.
- Teach safe and efficient driving techniques.
- The student will be exposed to the stresses of Code-3 operation and the importance of maintaining proper vehicle control.

Introduction

- This exercise is designed to acquaint a student with the hazards involved in driving at varied speeds.
- Actually experiencing many of the problems encountered at varied speeds enables the student to recognize personal and vehicle limitations.
- During the initial laps an instructor will point out mistakes and provide proper corrections. In the final laps the student will be evaluated on the ability to comply with the fundamentals of vehicle control techniques, hazard awareness, radio operation and the ability to cope with the stresses involved in Code-3 operation.

Course Description

- A performance driving track with painted curb lines, tires, berms, and cones.



- The track is a closed circuit course which includes a straightaway, and incorporates the city street complex as part of the available driving area.
- A "zigzag" maneuver is referred to as the serpentine. The serpentine is designed by traffic cones set up in the middle of the main straightaway.

Procedure to Drive Course

Each student is assigned an instructor who explains the proper use of the seat belt. The instructor ensures that the student is properly strapped into the passenger side. Both the instructor and the student are required to wear safety helmets. The instructor then demonstrates the techniques for driving the course, especially steering, smoothness and turning.

- Steering

    - An accepted method of steering control will be properly employed.

    - Emphasis will be placed on smoothness of application and steering accuracy.

- Smoothness

    Next, the student is instructed in the need for coordination and smoothness in steering <u>and</u> throttle control. It is pointed out that uneven throttle and/or steering control can cause the vehicle to sway back and forth, causing the car to go into a slide. When the vehicle is in a curve, some throttle application is necessary.

- Turning

    A major element in performance driving is the proper method of operating a vehicle through the turns. A speed <u>below</u> the maximum safe speed is attained <u>before</u> the vehicle gets to the curve. The most important factors to be considered in a high- speed turn are:

    - The safest speed at which the turn may be taken.

    - The distance from the turn that throttle must be reduced to safely enter the turn.

Procedure to Drive Course (continued)

- When and how to reapply throttle for maximum efficiency, and
- Proper roadway position.

Demonstration Phase

- The instructor will take a maximum of three student passengers on demonstration laps around the course.
- The first lap will be at very slow speeds while the instructor explains the course and reiterates driving techniques.
- The second demonstration lap will be at "training speeds" to illustrate the proper driving techniques and the effects of speed and weight transfer on the vehicle.

Practical Application Phase

- The training vehicles will only contain a student and an instructor passenger.
- The instructor will "coach" the student as the vehicle is driven around the course, raising the vehicle speeds proportionately to the student's increasing ability.
- After the familiarization laps, training speeds will generally have been attained.
- The following laps are performed in a Code-3 response mode utilizing the vehicle's emergency lighting and inside-sounding training sirens.
- During the Code-3 segment, the student will be confronted with interference problems in the form of route changes and hazards represented by traffic cones.

Practical Application Phase (continued)

- A final non Code-3 lap is utilized as a cool down process for the student. The effects of "siren syndrome" will be explained to the student.
- During this exercise, a student may be required to make radio transmissions.

Evaluation Phase

Students will be evaluated on performance in the following areas:

- Steering control
- Throttle application
- Smoothness and coordination
- Brake application
- Roadway position
- Speed judgment
- Radio procedure

Skill Course Exercise

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.

Materials Needed

- One or more law enforcement training vehicle.
- Cones and delineators to incorporate the desired exercises.
- A sufficient driving area for the incorporated exercises with allowance for safety purposes.

Goal

To allow the student to experience varied driving situations in a continuous manner of vehicle operation.

Objectives

- To allow the student to exercise all vehicle control techniques in a single continuous exercise.
- To interject decision-making into the driving process such as direction of travel, road position, etc.
- To allow the student to experience changing conditions in driving.

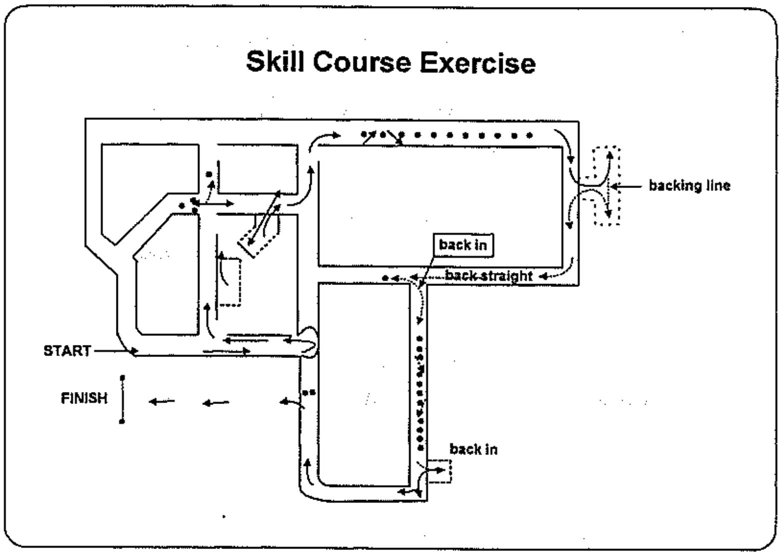
Introduction

- The skill course is composed of various driving exercises arranged in a pattern to allow the student to drive from exercise to exercise.
- The individual driving exercises are representative of situations encountered by law enforcement drivers in their daily routine.

Introduction (continued)

- Descriptions of the individual exercises will be presented elsewhere within this manual.
- Type and number of exercises are optional depending on the capability and needs of the program.

Course Description



- The course layout will be dependent on available driving area and number of exercises utilized.
- The course starting and stopping points should be in proximity to facilitate continuity.

Procedure to Drive Course

- The training vehicle will leave the starting point and proceed to the first exercise.
- The individual exercises will be driven employing the pertinent control techniques.
- The vehicle will be driven in this manner from exercise to exercise.

Procedure to Drive Course (continued)

- After arriving at the finish point, the vehicle can be directed back onto the course.
- The number of circuits is only limited by time constraints.

Demonstration Phase

- An instructor will negotiate the entire course employing proper vehicle control techniques.
- Another instructor will verbalize the demonstration.
- The students will need to follow the demonstration vehicle, either on foot or as passengers in instructor-driven vehicles.

Practical Application Phase

- The students will drive the course from exercise to exercise.
- Vehicle speeds will be increased in relation to driver ability.
- During this exercise, the student may be required to make radio transmissions while driving the vehicle.

Evaluation Phase

The student will be evaluated on performance on each individual segment of this exercise.

Commentary Driving Exercise

> ***PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.***

Materials Needed

One law enforcement training vehicle.

Goal

To strengthen the student's defensive driving tactics and attitudes.

Objectives

- To instill a conscious awareness of normal driving tasks.
- To identify potential hazards encountered on the highway.

Introduction

- Commentary driving is not only a training technique but can also serve as an evaluation process for both the basic and advanced driver.
- Every effort should be made to place the student in a relaxed atmosphere so that normal driving habits can be recognized.
- The instructor should communicate on an instructional basis, have a sincere interest in student improvement, and be knowledgeable in the techniques of collision avoidance.

Course Description

- The actual driving area will consist of city streets and roadways.
- The route of travel should be preplanned to incorporate as many varied roadway/driving situations as possible within the allotted time.

Procedure to Drive Course

- The instructor will occupy the front passenger seat while a student drives. The remaining students will be rear seat passenger/observers.
- The student will drive the prescribed route, operating the vehicle in a routine manner, observing all the rules of the road.
- All real or potential hazards will be related verbally to the occupants by the driver.
- The student will also operate the vehicle utilizing the proper vehicle control techniques.

Demonstration Phase

- The instructor will first drive the course, demonstrating the commentary driving techniques.
- The instructor will verbally announce each movement made while operating the vehicle and every real or potential hazard observed.

Practical Application Phase

The student will drive the vehicle through the route of travel emulating the instructor's demonstration to the best of their ability.

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Defensive driving tactics.
- Identification and verbalization of driving hazards.
- Compliance with the "rules of the road."
- Utilization of proper vehicle control techniques.

Driving Demonstration: Siren Audibility and Lighting

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE <u>POST SAFETY GUIDELINES</u> FOR DRIVER TRAINING.

Driving Demonstration Introduction

Two exercises classified as driving demonstrations are incorporated into the program: Siren Audibility and Lighting and Panic Stop or Emergency Braking.

The students participate as passengers and observers in the siren demonstration. In the emergency braking demonstration, the students will observe only.

Materials Needed

- Two law enforcement training vehicles equipped with standard electronic siren and red lights.
- It is recommended that the vehicles be equipped with safety harnesses, safety belts and a second speedometer visible to the rear seat passengers. Two instructors participate in this demonstration, each as a driver of a demonstrating vehicle.

Goal

- The student will recognize the limited effectiveness of the siren and emergency lights and the advantages of wig-wag headlights and spotlights.
- Familiarize the student with the hazards of passing on the right Code-3.

Objectives

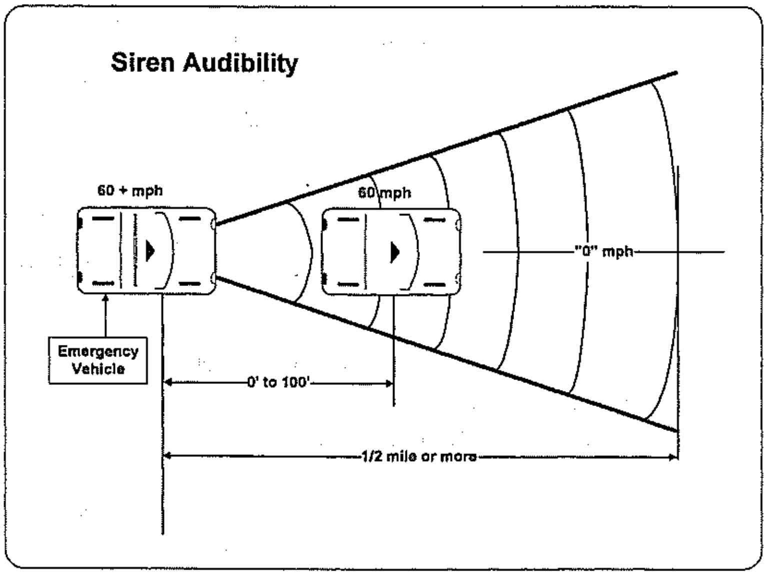
- The student will understand the various factors that will affect the audibility of the siren. These factors will include:
  - Weather conditions.
  - Traffic conditions.
  - Environment, i.e., buildings, hills, freeways, shrubbery, etc.
  - Distraction for the driving public (stereo, air conditioning, children, cellular phones, etc.).
  - Speed.
- Demonstrate effectiveness of a siren at operational speeds.
- Emphasize that the siren should not be used in lieu of knowledgeable and careful defensive driving.
- Demonstrate the effectiveness of headlights and spotlights in conjunction with emergency red lights in daytime.

Introduction

- The object of this phase of the program is to impress upon the students the limited effectiveness of a siren and the dangers incurred by relying on it as a means for clearing traffic. Caution is emphasized in this demonstration. When operating under red light and siren, Code-3 operations, a driver must use extreme caution at all times, especially when approaching intersections.
- It has been shown that headlights in daytime can be beneficial, as red lights are not always highly visible.

Course Description

Straight section of roadway, 1/4 to 1/2 mile in length, and minimum of two traffic lanes wide.



Procedure to Drive Course

- The demonstration is conducted under ideal conditions. The road is approximately 1/4 to 1/2 miles long, straight, level and paved.
- Students are divided into groups of four and assigned to ride in either vehicle or observe from a stationary position.
- One vehicle, the lead car, is driven on the straight portion of the road to a speed of approximately 35 to 40 MPH. The windows on this vehicle are open, and the students are requested to carry on a conversation in a normal tone of voice.
- The demonstration run:
  - The second vehicle is the emergency vehicle. As the lead car reaches its assigned speed, the

Procedure to Drive Course (continued)

emergency vehicle rapidly accelerates from a standing start, using the red lights and siren.

- Conditions are ideal for an early response from the students in the lead car. The startling result of this demonstration is that ordinarily, the siren is first heard when the emergency vehicle is approximately three car lengths in back of the lead car and traveling at a speed of approximately 50 to 55 MPH.

- If the students do not "anticipate" the sound of the siren, it will not be heard until the two vehicles are side-by-side. This fact is stressed.

- The effect of the siren on citizens who are driving with car radios, air conditioners, or heaters in operation is further reduced.

- At the conclusion of the run, the vehicles reverse positions. The same procedure is followed with the lead car having its windows closed. The results are approximately the same, except that the siren is ordinarily heard when the emergency vehicle is one car length behind the lead car.

- Both "Yelp" and "Wail" modes of the siren are demonstrated.

- The demonstration shows the students located at the stationary position that the use of headlights <u>may</u> allow the law enforcement vehicle to be seen before the siren is heard, and therefore, should be used during daytime emergency runs.

Instructor's Note:
It should be stressed that high-beam headlights used during darkness may "blind" oncoming traffic and make the red lights obscure.

Driving Demonstration: Panic Stop/Emergency Braking

PRIOR TO OPERATION OF THIS TRAINING EXERCISE THE INSTRUCTOR STAFF SHOULD REVIEW THE POST SAFETY GUIDELINES FOR DRIVER TRAINING.

Driving Demonstration Introduction

Two exercises classified as driving demonstrations are incorporated into the program: Siren Audibility and Lighting, and Panic Stop or Emergency Braking.

The students participate as passengers and observers in the siren demonstration. In the emergency braking demonstration, the students will observe only.

Materials Needed

A law enforcement training vehicle with safety equipment is used. The front bumper of the vehicle is equipped with an electric firing device, which detonates two .25 caliber chalk charges onto the roadway. ABS must be disconnected prior to this exercise for that portion of the demonstration related to four-wheel locked skid.

Goal

- To acquaint students with the minimum distances required to stop a vehicle under emergency conditions.
- To demonstrate the lack of steering control in a four wheel locked skid.
- To understand the hazards of following another vehicle too closely.

Objectives

- Illustrate the effects of speed on stopping distances.
- Demonstrate why following another vehicle too closely is hazardous.
- Show the lack of steering control during a four-wheel locked skid.
- Teach the minimum stopping limitations of a vehicle under given speeds.
- Demonstrate weight transfer in a vehicle under panic stop situations.
- Illustrate tire damage as a result of high-speed stopping.

Introduction

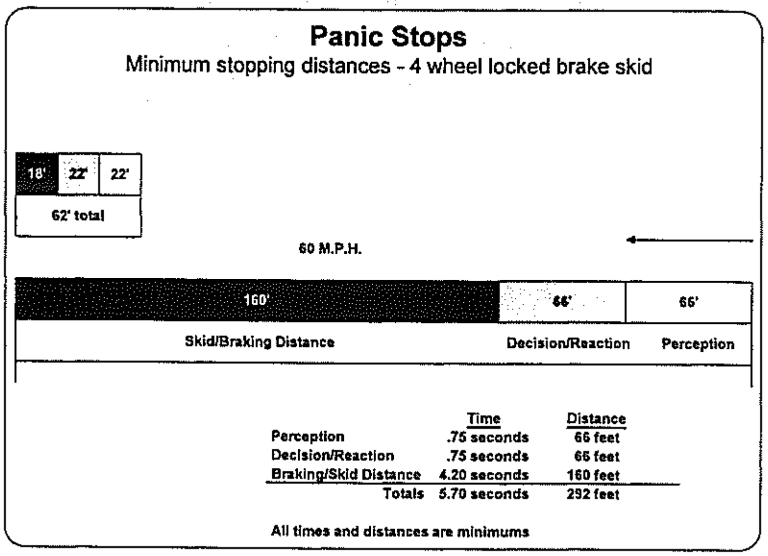
- Locked wheel braking occurs when a vehicle is slowed or stopped by applying a sufficient amount of pressure to the brake pedal to cause all four wheels to "lock up" and stop rotating.
- This technique will cause loss of directional control.

Procedure to Drive Course

- The demonstration is conducted under ideal conditions. The vehicle's brakes are constantly checked and adjusted. The pavement is dry, level, straight and paved.

Procedure to Drive Course (continued)

- The demonstration is administered at two speeds, 20 MPH and 60 MPH. When the passenger observes that the vehicle is maintaining the proper speed, the first charge is fired by a button located on the passenger side. The second is detonated when the driver applies the brake. The chalk marks allow instructors and students to accurately measure reaction and braking distance. The vehicle is kept in a four-wheel locked skid until it comes to a complete stop.



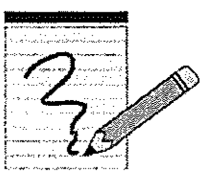
- The distance between the two chalk charges is <u>reaction distance</u> (the time the driver took to move his foot from the accelerator to the brake). The <u>braking distance</u> is from the second chalk charge to the front of the stopped vehicle. The <u>overall stopping distance</u> is the sum of the reaction distance and the braking distance.

- The braking method for this demonstration is called the "four-wheel-locked-skid-method," wherein, the driver locks all four wheels until the vehicle stops. Although this is not the most efficient method, it is the <u>most common</u> one for the average driver.

- The area of the tire that is in contact with the pavement is no larger than the size of a human palm. During the first moments of skidding, the rubber of the tire starts to melt due to the intense friction created by the skid.

Procedure to Drive Course (continued)

- Proper threshold braking will allow the driver to maintain steering control.
- The effects of different types of braking systems, tire wear, tread design and tire maintenance are discussed. Refer to the chart which gives the minimum stopping distances at 20 MPH and 60 MPH.



notes

Chapter Fifteen

testing/evaluation techniques

Written Examinations

The types of written examinations most commonly found and practiced are a combination of multiple choice, essay, true - false and sentence completion.

There are several POST requirements for written examinations, and the questions should be written in an acceptable format. (Content restrictions).

A Test Item Bank has been developed at POST for Basic Course presenters' voluntary use provided the contractual requirements for protection of the material are met.

Practical Exercises

Each student must be evaluated and successfully pass an examination process which measures performance. An evaluation form should be developed that documents each component of the exercises. Each driving exercise can be tested objectively utilizing specific elements such as:

- Skills
- Knowledge
- Attitude
- Judgment
- Tactics
- Vehicle control

Remediation

Remediation is the process of improving a student's ability in the subject matter because they displayed unsatisfactory performance. Techniques of remediation may vary depending upon the student's needs and abilities. The remediation training may range from individual instruction geared to specific weaknesses to repetition of the entire course.

Testing, evaluation, and remediation require careful management in terms of documentation, objectivity and equality in the appraisal process. Training records and test results must be completed and retained.

Instructional Evaluation Considerations

Instructor's Note:
Refer to the POST Driver Awareness Instructor Manual for details.

The EVOC Instructor must possess the skill to assess the training needs of the student and be able to apply the techniques of teaching to meet those needs.

1. **The instructor must have a working knowledge of the Four Step Teaching Method and be able to apply it to EVOC training situations.**

   - Introduction/motivation
   - Presentation
   - Application
   - Evaluation

2. **The instructor should use driving experiences as training opportunities.**

   - Review and critique significant incident(s).
   - Discuss hypothetical variations of an incident.

Instructional Evaluation Considerations (continued)

3. **The instructor should recognize and be able to provide remedial solutions to potential training problems.**
   - The student lacks self-confidence, which is manifested by:
     - Being afraid to make driving decisions.
     - Feeling threatened by the evaluation process.
     - Seeming not to understand, even after being told over and over.
     - Not being properly assertive while driving.
     - Not being heard on the radio.
     - Freezing on radio transmissions.
   - The instructor must be flexible in the training techniques used to fit the subject student's limitations or capabilities.
     - The amount of verbal instruction given to the student.
     - The timing of instruction to the student's ability to react.

4. **The instructor must give timely feedback and clear direction to guide the student to a level of competence.**
   - The evaluation must be based on performance, not on personality or other subjective factors.

Instructional Evaluation Considerations (continued)

- The evaluation must be based on written, standardized rating guides.
    - Instructor must comprehend rating system.
    - All instructors must rate consistently in accordance with rating guide.
- The instructor must develop observation skills.
- The instructor must report and rate performance observed.
    - Blend criticism with positive direction for improvement.
    - Including assessment of strengths and weaknesses to develop remedial strategies.
- The instructor must avoid common obstacles to effective evaluation.
    - "Halo effect" - tendency to judge a person on the basis of one factor deemed important by the rater (good or bad in that area, must be good/bad in all).
    - Leniency or strictness tendencies - inconsistency between "easy" and "hard" raters who are not following evaluation guidelines.
    - Central tendency - clusters all trainees at or near middle range rather than using full range of rating scale.
    - Recency - too much emphasis on performance immediately preceding rating deadline.

Instructional Evaluation Considerations (continued)

- Bias - influence of personal values on ratings.
- Factor clarity - importance of clear, consistent definition and understanding of all rating terms and values.
- Premature judgment - basing ratings on first impressions.
- Expended effort - Rewarding for efforts shown rather than actual performance.
- Untimely documentation - failure to document at time performance is observed.
- Inadequate documentation - lack of sufficient information regarding observed performance.

5. **The instructor must develop effective verbal critique style:**
   - Using effective interpersonal communication skills.
   - Providing immediate, supportive and correction feedback.
   - To minimize the stress of evaluation.
   - Keeping in mind student's perceptions of evaluation process.
   - Giving sincere critique/evaluation feedback applicable to the individual student.
   - Solicit and/or be prepared for student response to the critique (explanation, emotional displays, being passive, giving up, etc.).

Instructional Evaluation Considerations (continued)

6. **The instructor must exhibit the courage to rate a student "Below Standard" or the appropriate designated classification when the student fails to operate a vehicle at a minimally acceptable level.**

   - The primary concern is the future safety of the student and the public.
   - Another important concern is the potential liability to the student and the agency.
   - The instructor must clearly articulate to the student that the driving performance was unacceptable, explain the improper actions, and should provide feedback as to what can be done to improve.

7. **The instructor must develop an effective written critique style:**

   - Accurately translate performance.
   - Include documentation of remedial training undertaken.
   - Identify areas that lend themselves to remediation or retraining.
   - Include adequate narrative to correspond with and support ratings.
   - Remember to emphasize strengths as well as weaknesses.
   - Avoid: predictions of future performance, comparing one student's performance with another and general/conclusionary statements about student performance.
   - Comment on trainee's acceptance of criticism.

Instructional Evaluation Considerations (continued)

8. **The instructor also provides input to superiors for determining student status (i.e., regarding remediation, release to field, or termination) or discipline (depending on whether issue is performance failure or breach of conduct).**

9. **The instructor provides feedback to superiors regarding program effectiveness and/or suggested improvements.**

Instructor Development for Practical Application of Driving Exercises

1. **Create new driving exercises and present them to others.**
   - Create the course diagram and the lesson plan in the classroom
   - Setup and practice driving the exercise
   - Explain and demonstrate the exercise to other students
   - Teach and evaluate the other students on the new exercise

2. **The EVOC Training Staff should provide feedback to the student presenters, which minimally include:**
   - Evaluate vehicle dynamics
   - Emphasis on basic driving principles
   - Clarity of explanation of driving demonstration
   - Driving demonstration adherence to proper techniques
   - Feedback to fellow students during practical application

notes

Chapter Sixteen

course management

Site Selection

1. Site Preparation

- The site should be able to accommodate students, vehicles and exercises.
- The training may have separate sites for lecture and driving and should be located within convenient proximity to each other.
- The lecture classroom should be of adequate size to accommodate number of students trained.
- Site should have restricted access and be clearly identified during use.
- Restrooms should be available.
- Consideration should be given to providing a site convenient to student travel.
- Initiate a written agreement between the property owner and/or lessee and the law enforcement agency conducting the training absolving both of liability prior to use of any outside training site. Permit approvals and any Environmental Impact Report (EIR) should also be obtained if necessary.

Site Selection (continued)

- A site should be selected that will be free of obstructions (i.e., poles, buildings, trees, etc.) that could present a potential hazard. The site should be sufficiently remote so as not to present visual or noise distractions to the students or the public.

- The site should be accessible to water and electricity to accommodate specialized exercises and student comfort.

2. Resources

- Other driver training facilities and POST can provide assistance with design, layout and expertise. The names and locations of these facilities may be obtained by contacting POST.

- Design costs will vary depending on the layout, size and complexity of the plans. Drawings may range from in-house preparation to elaborate engineering blueprints.

- Funding can range from the refinement of an existing facility to the development of a new site financed by budget appropriations, bonds, grants, etc. Costs may vary from a few thousand dollars to several million.

- Consider the flow of training traffic and each driving exercise so that concurrent training does not cause cross-traffic and potential collision, unless intended for training purposes.

- Attention should also be given to solid impact avoidance, pedestrian traffic, and non-training vehicle access to eliminate potential collisions on and off the training course.

- The design should encompass safety considerations to include the possibility of mechanical failures and student panic.

Site Selection (continued)

- The course should be designed to accommodate the size and types of vehicles used in the training. The variation may range from small compacts to large multi-passenger vehicles.

3. Realistic Course Configurations

- The design of the course should include, but not be limited to:
  - Safety
  - Street/lane widths
  - Various intersection configurations
  - Forward/backing maneuvers
  - Speed
- Each exercise should relate directly to the prevention of law enforcement collisions.
- Skid pan exercises should be designed using a low coefficient of friction surface to accommodate front, rear, primary skids, secondary and ABS skids.

Equipment and Materials

1. Vehicles

Law enforcement-equipped vehicles are required. Vehicles must be continuously monitored and maintained for mechanical safety. Each training vehicle should be equipped with radio communications capability.

2. Course Markers

- Various types of cones or delineators may be used. Cones are available in various sizes from 6" to 36". Delineators are available 36" and larger.

Equipment and Materials (continued)

- The cone positions should be marked with traffic-line paint of various colors to speed future course set-up. Tires may be used as delineators; however, they may cause damage to the vehicle. They can be displaced upon impact, which may result in injury to bystanders/staff.
- Barricades are useful in course design to direct traffic.

3. Equipment Resources

The acquisition of equipment is limited only by funding, the imagination of the procurement staff, other government entities and corporate contributors.

Safety and Control

Instructor's Note:
Refer to POST Safety Guidelines.

- Safety rules established and communicated to students
- Restricted access training area
- Course design safety configurations
- Ongoing facility safety inspections
- Adequately equipped training vehicles
- Factory safety belts minimum standard
- Safety belts use required
- Helmets, roll bars and harness-type safety belt use during high-speed training
- Safety equipment on-site
- Vehicle safety inspections

Safety and Control (continued)

- Instructor certification
- Appropriate staff-to-student ratios
- Lower staff-to-student ratios for pursuit and Code-3 training
- Student fatigue

Scheduling

1. **Frequency**

   The frequency of training for officers is usually guided by training management decisions based on the needs of the individual officers and agencies. The frequency of course presentation is influenced by compatibility with other courses, facility availability and funding resources.

2. **Record Keeping**

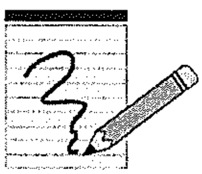
   All training should be properly documented and records retained pursuant to agency policy.

Contingency Planning

- From time to time problems develop concerning availability of the site, instructors and/or equipment.
- Training sites such as airfields, parking lots, school campuses and military bases may be available on a temporary basis to meet short-term emergencies.
- A standby pool of instructors is desirable because of conflicting schedules and commitments, especially when the teaching staff is composed of law enforcement officers.
- Because of the mechanical breakdown factor, standby equipment should be readily available when failures occur.

Student Instruction Ratio

POST's maximum ratio of students to instructor is currently five to one in the Basic Course. Although there are no requirements for other courses, consideration should be given to the nature of the training exercise, and factors such as operational speed. Generally, a lower ratio is desirable as speed increases.



notes

Chapter Seventeen

instructional equipment

Audio – Visual Equipment

- Video cassette recorder, videocam recorders and TV monitors
- Slide projector/screen
- Video projector/screen
- Interactive videodisc system
- Overhead projector
- Computer-generated software presentation

Visual Aids

Instructor's Note:
Refer to Appendix A for a listing of EVOC visual aids.

- Films/videotapes
- Slides
- Transparencies
- Chalkboard/dry erase board
- Flip chart/easel
- Diagrams/maps
- LCD projectors
- Props

Simulators	Part task, judgment, decision-making.
Vehicles	• Law enforcement training vehicles • Skid pan vehicles • Auxiliary support vehicles • Suspect vehicles
Communication and Electronic Equipment	• Two-way radios (for training and emergency use) • Telephone/Cellphones • Public address systems • Recorders (siren/dispatcher/voice simulators)
Safety and Control Equipment	• Two/Three-phase signal (collision avoidance exercise) • Light control box (collision avoidance exercise) • First aid kits • Fire extinguishers • Portable generators • Safety helmets (DOT or SNELL Approved)

Additional Equipment for High-Speed Courses

- Four-point or five-point occupant restraint system
- Roll bars
- Auxiliary brake
- Ignition kill switch
- Emergency extraction equipment

notes

Appendix A

videotapes and sources

Videotapes

SOURCE	TITLE	MINUTES
1	Motor Mania	7
2	Broken Glass II	14
2	Pro Driving Tactics	15
2	Speaking Effectively to One or One Thousand	18
3	Ripley's Seat Belt Safety	8
3	Waterskiing on Four Wheels	13
4	Driven to Distraction	5
4	Emergency Lighting & Siren Audibility	7
4	LASD Fatal Traffic Collisions	9
4	Skid Control	12
4	Vehicle Operations: Decision Making Issues for Sergeants	13
4	Vehicle Operations: Decision Making Issues for Lieutenants	10
5	Extra Margin for Safety	19
5	Pursuit Immobilization Techniques	8
6	Arizona Pursuit	22
7	Top Driver	75
8	Hot Pursuit	17
9	Interactive Video Disk (Driver Training)	480
9	Pursuit Guidelines Telecourse	100
9	Pursuit Guidelines for Executives	45
10	Anti-Lock Brake System	8
11	Anti-Lock Brake System	10
12	Police Pursuit	17

Sources

SOURCE	NAME OF SOURCE
1	Disney Educational Center
2	Aims Media, 6901 Woodley Avenue, Van Nuys, CA 91406-4878
3	U.S. Department of Transportation
4	LASD, 11511 Colima Road, Whittier, CA 90604 (562) 946-7841
5	CHP (916) 372-5620
6	Phoenix Police Department
7	National Safety Council
8	CBS 60 Minutes
9	California Commission on POST
10	Chevrolet Motor Division
11	Ford Motor Company
12	Motorola Teleprograms
13	Alert International Video Library (612) 454-1250

Appendix B

Penal Code Section 13519.8

Section 1. Section 13519.8 is added to the Penal Code, to read:

- The commission shall implement, on or before November 1, 1994, a course or courses of instruction for the training of law enforcement officers in the handling of high-speed vehicle pursuits and shall also develop uniform minimum guidelines for adoption by California law enforcement agencies for response to high-speed vehicle pursuits. The guidelines and course of instruction shall stress the importance of vehicle safety and protecting the public at all times, include a regular assessment of law enforcement's vehicle pursuit policies, practices, and training, and recognize the need to balance the known offense and the need for immediate capture against the risks to officers and other citizens of a high-speed pursuit.

  As used in this section, "law enforcement officer' includes any officer or employee of a local police of sheriff's department or the California Highway patrol.

Penal Code Section 13519.8 (continued)

- The course or courses of basic training for law enforcement officers and the guidelines shall include adequate consideration of each of the following subjects:
  - When to initiate a pursuit.
  - The number of involved law enforcement units permitted.
  - Responsibilities of primary and secondary law enforcement units.
  - Driving tactics.
  - Helicopter assistance.
  - Communications.
  - Capture of suspects.
  - Termination of a pursuit.
  - Supervisory responsibilities.
  - Blocking, ramming, boxing, and roadblock procedures.
  - Speed limits.
  - Interjurisdictional considerations.
  - Conditions of the vehicle, driver, roadway, weather, and traffic.
  - Hazards to uninvolved bystanders or motorists.
  - Reporting and postpursuit analysis.

Penal Code Section 13519.8 (continued)

- All law enforcement officers who have received their basic training before January 1, 1995, shall participate in supplementary training on high-speed vehicle pursuits, as prescribed and certified by the commission.

  Local law enforcement agencies are encouraged to include, as part of their advanced officer training program, periodic updates and training on high-speed vehicle pursuit. The commission shall assist where possible.

- The course or courses of instruction, the learning and performance objectives, the standards for the training, and the guidelines shall be developed by the commission in consultation with appropriate groups and individuals having an interest and expertise in the field of high-speed vehicle pursuits. The groups and individuals shall include, but not be limited to, law enforcement agencies, police academy instructors, subject matter experts, and members of the public.

  The commission, in consultation with these groups and individuals, shall review existing training programs to determine the ways in which high-speed pursuit training may be included as part of ongoing programs.

- It is the intent of the Legislature that all local law enforcement agencies adopt the minimum guidelines on high-speed vehicle pursuit developed by the commission.

Pursuit Guidelines

I. **Purpose**: To establish general guidelines regarding law enforcement vehicular pursuits in order to assign responsibilities and to assist officers in the exercise of discretion in an attempt to reduce foreseeable hazards to the public a law enforcement officers.

A statement should be included in the pursuit policy stating that the policy is in compliance with the provisions of 17004.7 CVC.

II. **When Pursuits May Be Initiated**: Pursuits may be initiated when an officer has reasonable cause to stop a vehicle and the driver fails to stop as required by law.

III. **When Pursuits Should Be Discontinued:** Officers should consider discontinuing a pursuit when it poses a serious and unreasonable risk of harm to the pursuing officer or the public, balanced against the seriousness of the violations. Justification to continue a pursuit will be based on what reasonably appears to be the facts known or perceived by the officer.

IV. **Supervisors Responsibility**

- Upon being notified of a pursuit, the appropriate supervisor should assure himself of the following:
  - No more than the required units are involved in the pursuit.
  - Proper radio frequencies and procedures are being used.
  - Affected allied agencies are being notified.
  - Available aircraft has been requested as necessary.

Pursuit Guidelines (continued)

- The supervisor should order the discontinuance of the pursuit when it appears to him that the pursuit poses a serious and unreasonable risk of harm to the pursuing officers or the public, balanced against the seriousness of the violations.

- The supervisor should proceed to the termination point of the pursuit, if practical, to provide guidance.

V. Dispatcher Responsibility

- Notify a supervisor of the pursuit as soon as practical.

- Notify affected outside jurisdictions as necessary and practical.

VI. Radio Procedures

- The unit initiating the pursuit should immediately notify the dispatcher that a pursuit is underway, giving:
  - Location and direction of travel.
  - Reason for the pursuit.
  - Speed.
  - Description of vehicle.
  - Number of occupants.
  - Identity, if known, of occupants.
  - During the pursuit, the above information should be updated, as practical as circumstances change.
  - Officers in the second and subsequent units joining the pursuit should notify the dispatch center as soon as possible.

Pursuit Guidelines (continued)

- If practical, the second unit should assume responsibility for radio procedures in calling the pursuit.

VII. Vehicle Procedures

- The initiating and assisting pursuit units shall activate the red light and siren continuously when involved in a pursuit.
- The number of units involved in the pursuit may vary with the circumstances and should be kept to the necessary minimum.
- A pursuit initiated by a motorcycle or unmarked unit should normally be abandoned when a marked car is available to assume the pursuit responsibilities.
  - The decision to use a motorcycle or unmarked unit in a pursuit shall be at the discretion of the supervisor who must weigh the facts available to him.
  - If necessary, the initiating motorcycle or unmarked unit that discontinued the pursuit should proceed to the termination point, obeying applicable traffic laws.

VIII. Air Support

Aerial assistance may be used at the discretion of the supervisor dependent upon the nature of the pursuit and other facts known to the supervisor.

- If practical, the air unit may assume responsibility for radio traffic.

Pursuit Guidelines (continued)

IX. Pursuit Into Other Jurisdictions

- All jurisdictions affected by a pursuit should be notified of the pursuit as soon as practical.
  - Such notification should not be considered as a request to join in the pursuit.
- Other jurisdictions should not join a pursuit unless requested by the initiating agency and approved by the other jurisdiction's supervisor.
  - Consideration should be given to requesting that the affected agency call the pursuit while it travels through their jurisdiction.
- If practical, non-initiating units should terminate their involvement in the pursuit when the pursuit leaves their jurisdiction.

notes

Appendix C

siren types

Title 13, Section 8 California Code of Regulations

1. **Section 1020 - Scope**

   This article applies to sirens for use on authorized emergency vehicles in accordance with Vehicle Code Section 27002.

2. **Section 1021 – Definitions**

   - A "siren" is an audible warning device that produces the readily recognizable warning sound identified with emergency vehicles. An audible device, such as a vehicle theft alarm, that produces a sound with one or more of the following characteristics is not a siren:

     - An unvarying sound.
     - A varying sound that cycles at a rate faster than 400 cycles per minute.
     - A discontinuous sound that repeats at rates lower than 90 cycles per minute or higher than 400 cycles per minute.
     - A sound frequency (and any second harmonics) lower than 100 Hz or higher than 5000 Hz.

Title 13, Section 8 California Code of Regulations (continued)

- An "authorized emergency vehicle siren" is a device that meets the requirements of this article.
- An "electromechanical siren" consists of a stator and rotor driven by an electric motor.
- An "electronic siren" consists of an oscillator, amplifier and speaker.
- A "mechanical siren" consists of a stator and rotor driven by a mechanical connection to a moving part of the vehicle or engine.
- "Manual" means a siren control that allows the operator to produce a wailing sound by alternately applying and releasing a momentary contact switch.
- "Wail" is a siren sound producing a slow, continuous automatic cycling of increasing and decreasing frequencies and sound levels.
- "Yelp" is a siren sound producing a rapid, continuous automatic cycling of increasing and decreasing frequencies and sound levels.
- "Hi-Lo" is a non-siren sound alternating between a fixed high and a fixed low frequency and is not legal in California.
- "ANSI" means a standard adopted by the American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.
- "SAE" means a standard or recommended practice of the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096.

Instructor's Note:
Authority cited: Section 26103, Vehicle Code, Reference: Sections 26103, 26104 and 27002, Vehicle Code.

Title 13, Section 8 California Code of Regulations (continued)

3. Section 1028 – Performance Requirements

- Siren Functions. Electronic sirens shall have a wail function and may also have manual and yelp functions. No other function is permitted on sirens sold after January 1, 1982, except for voice communication. Sirens shall meet the following requirements in addition to the sound levels specified in Table I:

  - Wail. The wail function shall have an automatic undulating pitch rate of not less than 10 nor more than 30 oscillations per minute. The sound level shall not drop more than 10 dB (A) below the required values in Table I during the lowest portion of any cycle.

  - Manual. Electronic sirens manufactured after January 1, 1982, which include a manual function shall use the vehicle horn ring or any other manual momentary contact switch to allow the vehicle operator to switch between the wail and yelp functions, to momentarily override the descending sound pattern of the automatic cycle when the control is set at "wail", or to produce a manually-cycled wail when the control is set at "manual".

  - Yelp. The yelp function shall have an automatic undulating pitch rate of not less than 150 nor more than 250 oscillations per minute, except for sirens sold prior to July 1, 1980.

- Sound Level Output. Two classes of sirens, A and B, are established based on the A-weighted sound level output measured at the angles specified in Table I. The sound level measurements of electronic sirens shall be started immediately after the siren has been operated for one minute. A deviation of 1 dB (A) below the specified value shall be allowed at any three of the eleven test points.

Title 13, Section 8 California Code of Regulations (continued)

4. Section 1029

Table I Minimum A-Weighted Sound Level at 3.0m (9.8ft.)

Rotation deg Left and Right from Axis	Sound Level dB(A) Class A	Sound Level dB(A) Class B
0	120	115
10	119	114
20	118	113
30	117	112
40	115	110
50	113	108

- Siren Classification.
- The A or B overall classification of a siren shall be the class of the lowest performing function incorporated in the siren. The reported sound level for each test point under manual operation shall be the steady-state level reached during continuous activation. The reported sound level for the wail and yelp functions at each test point shall be the average of the levels reached by five consecutive major peaks.
- Frequency Requirements. The maximum sound level in the axis of the siren shall occur in either the 1000- or the 2000-Hz octave bands for all functions.
- Electronic Siren Wattage. The wattage drawn by speakers of electronic sirens shall not exceed the following requirements when tested at the voltages specified in Section 1027(b) of this article. The voltage leads of the watt-meter shall be connected to the speaker terminals on the amplifier, and readings shall be taken in the order of manual, wail and yelp.

Title 13, Section 8 California Code of Regulations (continued)

Instructor's Note:
Authority cited: Section 26103, Vehicle Code. Reference: Sections 26103 and 26104, Vehicle Code

- At the voltage specified for the sound level tests, the measured wattage after one minute and before three minutes of operation shall not exceed the rating of the driver.
- At the voltage specified for wattage tests, the wattage shall not exceed 105% of the rating of the driver when measured after ten minutes of operation.
- The wattage recorded for wail and yelp shall be the mathematical average of the high and low readings of five continuous cycles as the signal varies.

5. 1029 – Installation Requirements

Sirens and speakers installed on authorized emergency vehicles shall be mounted as follows:

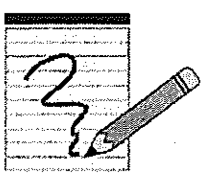
- Electromechanical and Mechanical Sirens. Class A electromechanical and mechanical sirens shall be mounted outside, between the grille and radiator, or under the hood. Class B electromechanical and mechanical sirens shall be mounted outside or between the grille and the radiator. Mechanical motorcycle sirens that do not operate when the vehicle is stationary shall not be installed on motorcycles manufactured after January 1, 1981.
- Electronic Sirens. Class A and B electronic sirens installed after January 1, 1976, shall be mounted outside or with the horn opening facing forward ahead of the radiator with a relatively open path for the sound to project forward. The horn axis shall be parallel to the road and vehicle centerline.
- Dual Speakers. Dual speakers for electronic sirens shall be connected in phase and mounted so that the speaker axis is parallel to the vehicle centerline or angled outward not more than 10 degrees to the sides.

Title 13, Section 8 California Code of Regulations (continued)

- Speakers in Lightbars. Electronic siren speakers may be mounted facing forward behind a speaker grille in a lightbar.

- Transfer. A siren, except a motorcycle mechanical siren, meeting the requirements established by the department at the time it was first installed on an authorized emergency vehicle may be transferred between authorized emergency vehicles by the owner or sold by the owner for use on other authorized emergency vehicles.

Instructor's Note:
Authority cited: Section 26103, Vehicle Code. Reference: Sections 24012 and 26103, Vehicle Code.



notes

Appendix D

glossary

ABS
The Anti-lock Brake System is a computer controlled system which prevents a vehicle's brakes from locking up.

Acceleration
The rate of change of velocity with respect to time. It can be expressed as feet per second^2.

Acute vision
Also known as visual acuity. The clear vision or that portion of what a person sees that is in focus. It constitutes approximately three to four percent of what a person sees, with the rest falling under the definition of peripheral vision

Adhesion
The sticking tendency or traction relationship between two surfaces.

Aggression
A hazardous attitude characterized by mean, angry and hostile driving.

Apex
The tightest, innermost part of the vehicle path through a turn (geometric apex).

Attitude
A state of mind - good, bad, or indifferent. Attitudes cannot be directly observed but must be inferred from overt behavior, both verbal and non-verbal.

Available roadway
The portion of the road available for your use. During normal driving, the available roadway includes only your lane(s). During emergency response and pursuit driving, the available roadway may include all lanes.

Balanced hand position A wide grip on the steering wheel. Acceptable methods are a 9 o'clock and 3 o'clock position or an 8 o'clock and 4 o'clock position.

Balancing Test In the context of this document, balancing test is an ongoing decision process employed by law enforcement officers and supervisors to analyze the cost(s)/benefit(s) of initiating, continuing and discontinuing a pursuit. It considers outcomes (positive and negative) in support of the decisions to initiate, continue and discontinue a pursuit.

Black Ice An invisible thin sheet of extremely slick ice that is non-reflective and resembles bare pavement. It generally has a lower coefficient of friction than other types of ice.

Brake fade The loss of braking efficiency normally due to heat build-up resulting from excessive use.

Brake lock-up The application of brakes to the point that the wheels can no longer rotate.

Braking distance The distance through which brakes are applied to slow a vehicle; (minimum braking distance is the shortest distance in which a particular vehicle can be stopped by braking from a specified speed on a particular surface); the distance from application of brakes to collision or stop.

Braking, extended release Begins with straight line threshold braking and extends the release of the brake into the turn to the apex.

Caravanning A line of law enforcement vehicles following each other while in pursuit of a law violator.

Caster effect The design characteristic of a vehicle that helps to straighten out the front wheels after driving around a corner.

Centrifugal force The force on a body in a curved motion that is directed away from the axis of rotation. A force which acts or impels an object away from the center of rotation.

Centripetal force	The force on a body in a curved motion that is directed toward the center axis of rotation. The force required to keep a moving mass in a circular path. A force which acts or impels an object toward a center of rotation.
Closure rate	The appropriate rate of deceleration necessary to negotiate a curve, avoid a hazard, or stop.
Code-3	Operation of an emergency vehicle with red lights and siren in compliance with Sections 21055 and 21056 CVC.
Coefficient of friction	The measure of adhesion between two surfaces (e.g., a tire and the roadway).
Collision	An impact caused by a sequence of events that produces unintended injury, death, or property damage. Sometimes incorrectly called an accident.
Collision avoidance	Maneuvering the vehicle from the intended path of travel quickly and efficiently to an alternate path of travel, when the intended path of travel becomes unsafe.
Countersteer	Turning the front wheels to counter the effects of a previous turning movement or of a skid, to put the vehicle on its intended course of travel.
Deadly force	An action or force likely to cause death or great bodily harm (e.g., roadblocks, ramming and use of firearms).
Deceleration	The change of speed as the vehicle slows down.
Discontinue	In the context of this document, discontinue describes the decision and actions of the pursuing law enforcement driver(s) who stops chasing the fleeing vehicle. Actions to discontinue the pursuit may include turning off the emergency light(s) and siren, reducing speed, observing the applicable rules of the road, allowing the distance between the law enforcement vehicle and the fleeing vehicle to increase, changing direction away from the fleeing vehicle and notifying the dispatch center that the pursuit has been discontinued.

Driving, defensive	Operating a vehicle in such a manner as to be able to avoid involvement in a collision, no matter what the conditions.
Driving, emergency response	A response to a situation that is life threatening or that involves a crime in progress with a strong likelihood of a response related arrest; justifies the legal use of emergency warning devices.
Driving, non-emergency (patrol)	All operations of a vehicle in other than an emergency or pursuit mode.
Driving, pursuit	The act or instance of chasing or pursuing a fleeing vehicle in an attempt to apprehend the driver and/or occupants.
Ego	A personality component that controls behavior. A state of mind that may cause a law enforcement officer to disregard caution and common sense.
Emergency	A situation in which there is a direct threat to a person's life and for which a rapid response by law enforcement will diminish the threat. Also, a crime in progress reported with sufficient promptness to demonstrate the strong likelihood of a response related arrest.
Emergency warning device	A solid red light to the front and a siren that meet the requirements of state statute(s).
Evasive action	Any action taken by a driver to avoid a hazardous situation. Steering, braking, or accelerating to avoid a collision or other accident.
Failure to yield	In the context of this document, failure to yield refers to the actions of a vehicle operator who fails to stop or respond to the emergency light(s) and siren of a law enforcement vehicle. Generally, the vehicle operator continues to travel forward at or below the speed limit, observes traffic control devices and other applicable rules of the road, and does not change the direction of travel in an evasive manner.

Fight or flight mechanism	A reaction characteristic of all higher forms of animal life to an especially stressful situation. It prepares the animal/human to escape or fight by sending more blood to the skeletal muscles in order to sustain them during a fast attack or retreat.
Following	In the context of this document, following refers to the actions of a law enforcement officer to stay behind a vehicle and attempt to keep the vehicle in sight, while complying with applicable laws and rules of the road.
Footprint (contact patch)	The area of the tire in contact with the roadway surface.
Force	An influence (e.g., a push or pull) that causes motion or change of motion.
Force, centrifugal	The force on a body in a curved motion that is directed away from the axis of rotation. A force which acts or impels an object away from the center of rotation.
Force, centripetal	The force on a body in a curved motion that is directed toward the center axis of rotation. The force required to keep a moving mass in a circular path. A force which acts or impels an object toward a center of rotation.
Friction	Resistance to any force trying to produce motion; constantly present and always working opposite the direction in which an object is being moved. A force of resistance acting on a body which prevents or inhibits any possible slipping of the body.
Front end swing	The movement of the front end in the opposite direction of the steering input when backing up.
Front wheel skid	Occurs when the front tires have lost their adhesion to the ground and the vehicle does not travel in the direction that it is being steered.
Full throttle	Depressing the gas pedal to the floor. This action can result in loss of traction and control.

Guideline	In contrast to policy, which may prescribe or define courses of action or decision-making options, guidelines, in the context of this document, describe suggested discretionary actions regarding formulation of policy.
Hydroplaning	Tires ride upon the water causing loss of contact with the surface of the road. Contributing factors are water depth, tire tread depth, tire pressure, and vehicle speed.
Hyperventilation	Abnormally rapid or deep respiration in which excessive quantities of air are taken in, causing buzzing in the ears, tingling of the extremities, and dulled perception.
Impatience	A hazardous attitude characterized by tension caused by the feeling of always being in a hurry.
Intervention tactics	In the context of this document, intervention tactics refers to specific operational tactics (e.g., pursuit immobilization tactics [PIT], blocking, ramming, boxing, tire deflation device and roadblock procedures) intended to disable a fleeing vehicle or otherwise prevent further flight or escape.
Lack of confidence	A hazardous attitude characterized by an underestimation of one's driving ability, often to the point of fear of driving.
Late apex	The point in a turn where you can see the exit from the turn.
Late steering	The tendency, while driving in reverse, to input steering late due to the fact that the wheels that provide steering are following the driver. The rear of the vehicle must be pointed by the proper use of the front wheels.
Lateral weight transfer	Turning right transfers weight to the left side of the vehicle and turning left transfers weight to the right side of the vehicle.
Legal intervention	The use of force to terminate a pursuit situation.

Liability, criminal	The liability that is imposed upon a person who is guilty of gross negligence or misconduct.
Liability, direct civil	The liability that is imposed upon a person or agency for causing injury to another through negligence or willful misconduct.
Liability, vicarious civil	The liability that is imposed upon one who is without personal fault or complicity, because of the relationship that the person bears towards the person who actually performed the wrongful act or omission.
Longitudinal weight transfer	Acceleration that causes weight to transfer to the rear axle. Braking or deceleration that causes weight to transfer to the front.
Maximum acceleration	Acceleration as quickly as possible to full throttle without losing traction
Negligence	For civil litigation in some states it is the failure of a law enforcement officer to conform his or her conduct to the standard, which a reasonable law enforcement officer would have conformed under the same or similar circumstances. In other states an officer is held to a standard of the "reasonable man".
Offender	In the context of this document, offender refers to the subject operator and/or occupant(s) of a pursued vehicle. Based on an agency's own standard for authorizing or continuing pursuits, the offender may or may not have violated a statute to become a legitimate object of a pursuit (i.e., initial reasons for attempting to stop an individual may include: investigation, suspicious activity, or reasonable suspicion of a violation of statute).
Optimum throttle	The amount of throttle necessary to obtain and maintain desired speed.

Over-confidence A hazardous attitude characterized by exaggerated opinion of one's driving ability and vehicle handling ability.

Oversteer Reduction of traction to the rear tires during a steering movement causes the rear of the vehicle to slide to the outside.

Overtaking An active attempt to catch up to a motorist who is not aware of an officer's signals to stop.

Peer pressure A hazardous attitude characterized by allowing real or perceived peer influence to override one's better judgement.

Perception An awareness of objects and other data through any of the senses.

Peripheral vision A lateral degree of perception present when the eyes are focused straight ahead.

Physiological factors Factors such as vision, hearing, and fatigue that can interfere with defensive driving.

Policy In the context of this document, the following best defines the definition of a policy:

"Although 'policy' can be defined to mean a guideline for carrying out even the most detailed action, the term usually refers to the broad statement of principle."[1]

"Policy may consist of values and principles which guide an agency's behavior or performance of its activity. It reflects a statement of guiding principles that should be done in order to achieve an agency's objectives."[2]

1 **O.W. Wilson and Roy Clinton McLaren.** *Police Administration,* 4th ed.,
2 *Manual of the Los Angeles Police Department.* Volume 1/010, **Policy**, Los Angeles, 1992.

Preoccupation	A hazardous attitude characterized by thinking of other things besides driving.
Psychological factors	Factors such as attitudes and emotions that can interfere with defensive driving.
Psychomotor skill	A muscular proficiency or dexterity.
Pursuit	An event involving one or more officers attempting to detain a suspect operating a motor vehicle while the suspect is attempting to avoid arrest by using high speed driving or other evasive tactics, such as driving off a highway, turning suddenly, or driving in a legal manner but willfully failing to yield to the officer's signal to stop.
Pursuit, high speed	A pursuit involving a law enforcement officer traveling at a speed well in excess of posted or prima facie limits.
Reaction time	The time after you have perceived the danger until the action is initiated (usually between .5 to 1.5 seconds). Reaction time may be affected by fatigue and use of drugs and alcohol.
Rear wheel cheat	While driving forward during a turn, the rear tires will track along a path inside that of the front tires.
Rear wheel skid	The skid occurring when the rear wheels have lost their grip with the road, causing the back of the vehicle to swing out.
Right of way	Rules governing situations when multiple vehicles are competing for the same space.
Roadway position	The position of the vehicle on the roadway that maximizes speed with minimum steering and risk of loss of vehicle control while negotiating a turn. Also known as "driving line".
Rolling friction	Directional friction caused by tire rolling along the road surface. Implies that the front wheels of vehicle must be rolling in order for the vehicle to be steered.

Rules of the road	Rules prescribed for any citizen operating motor vehicle on California highways.
Self-righteousness	Hazardous attitude characterized by the tendency to think that one is always right.
Shuffle steering	A balanced two hand steering method with the right hand controlling the right half of the steering wheel, and the left hand controlling the left half of the steering wheel. Both hands remain in contact with the steering wheel and do an equal amount of work.
Siren	Device used to generate and transmit the easily recognized oscillating sound whose frequency varies with time, used as warning signal by police vehicles, fire vehicles, and ambulances. There are two types of sirens; wail and yelp.
Siren syndrome	A physiological condition (adrenaline flow, increased heart and respiration rate) caused by the stresses of Code-3 operation that may affect decision-making skills of a law enforcement officer.
Skid	The loss of traction to one or more wheels.
Skid, braking	The loss of traction when one or more wheels are locked by excessive braking pressure.
Skid, cornering	The loss of traction in negotiating a curve or turn at a speed faster than can be sustained by the tire-road cornering traction limits.
Skid, secondary	Skid in the opposite direction of the original skid.
Space cushion	The open area surrounding the vehicle while it is in motion allowing an "escape route" to the front, rear or sides.
Space management	The selection of the best speed control, path of travel, or communication technique to maximize control of the space surrounding the vehicle.

Speed judgment	The driver's ability to evaluate how the present speed of the vehicle can be increased or decreased to meet the next driving task.
Spring loading	Energy that builds in vehicle springs when the vehicle experiences weight transfer. This energy is released when the springs unload.
Steering recovery	Controlled reduction of steering input causing a vehicle to return to a straight line of travel.
Stopping distance	Refer to braking distance.
Stress	Mental, emotional, or physical strain or distress that can dull perception and initiate the body's fight or flight mechanism.
Supervisor	In the context of this document, a supervisor is a person who has specific, formal responsibility for issuing orders and providing direction to subordinates. Supervisory responsibility may begin at any level and extend to the highest executive level in an agency.
Terminate	In the context of this document, <u>terminate</u> is used interchangeably with discontinue. See the definition of <u>discontinue</u>, above.
Threshold braking	Application of braking force to the point just prior to wheel lock-up, bringing the tire to the threshold of a locked wheel skid. May be more efficient at slowing a vehicle than locked wheel braking.
Throttle	Gas pedal, accelerator.
Tracking	A tendency of law enforcement drivers to concentrate on a fleeing vehicle to the point that they (the officer) begin to unconsciously duplicate the suspect's unsafe driving maneuvers.

Traction	A tendency of law enforcement drivers to concentrate on a fleeing vehicle to the point that they (the officer) begin to unconsciously duplicate the suspect's unsafe driving maneuvers.
Traction limit	The upper limit of the traction available to keep a vehicle under control.
Training, refresher	Training given to a person after being inactive for a period of time. Or, training given to freshen knowledge, skills, and abilities infrequently used.
Understeer	Reduction of traction of the front tires tends to cause the vehicle to continue in a straight line with lessening of directional steering control (usually induced by excessive speed).
Vehicle abuse	Behaviors and driving actions that lead to mechanical failure of the vehicle.
Vehicle capability	The mechanical and handling capability of the vehicle.
Vehicle control	Developing an understanding of the principles and developing the proficiency pertaining to the successful operation of vehicles under all driving conditions.
Vehicle dynamics	Any physical force that affects the control and direction of a vehicle in motion.
Velocity	The rate of change of position relative to time.
Visual horizon	The point at which a driver's eyes are focused on the roadway.
Weight transfer	The transfer of weight to the front, rear, or either side caused by acceleration, deceleration, or turning.

Appendix E

reference charts

Average Coefficients of Friction for Various Roadway Surfaces

Description of Road Surface	DRY				WET			
	Under 30 mph		Over 30 mph		Under 30 mph		Over 30 mph	
	From	To	From	To	From	To	From	To
CONCRETE								
New, sharp	.80	1.00	.70	.85	.50	.80	.40	.75
Traveled	.60	.80	.60	.75	.45	.70	.45	.65
Traffic polished	.55	.75	.50	.65	.45	.65	.45	.60
ASPHALT OR TAR								
New, sharp	.80	1.00	.65	.70	.50	.80	.45	.75
Traveled	.60	.80	.55	.70	.45	.70	.40	.65
GRAVEL								
Packed, oiled	.55	.85	.50	.80	.40	.80	.40	.60
Loose	.40	.70	.40	.70	.45	.75	.45	.75
ICE								
Smooth	.10	.25	.07	.20	.05	.10	.05	.10
SNOW								
Packed	.30	.55	.35	.55	.30	.60	.30	.60
METAL								
Grid, open	.70	.90	.55	.75	.25	.45	.20	.35

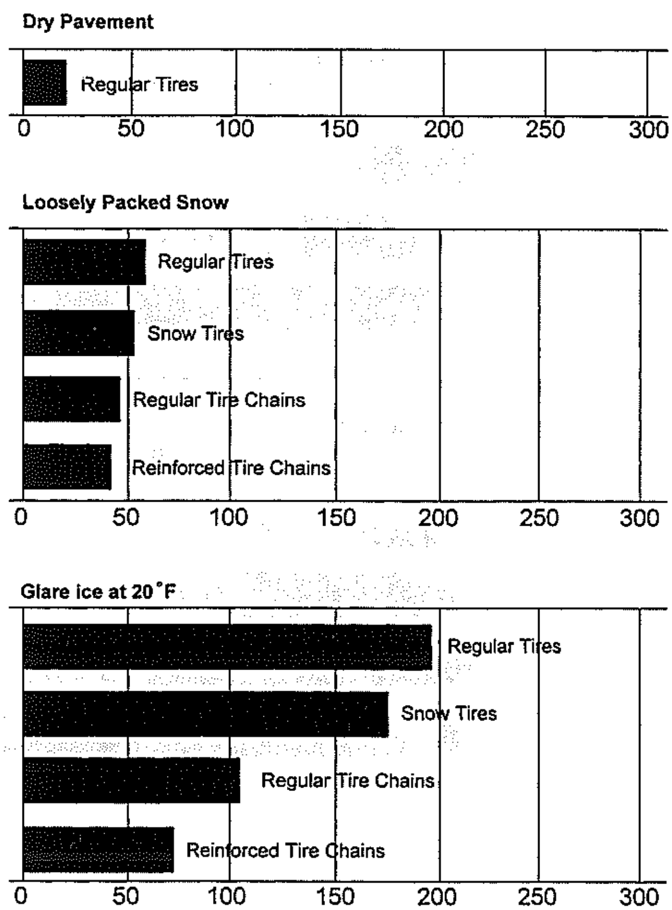
Tires and Coefficient of Friction

"Coefficient of Friction" is a measurement of the *stickiness* or adhesion that exists between a tire and the roadway. The actual numbers assigned to different road surfaces as their coefficients are used for calculating a vehicle's potential stopping distance.

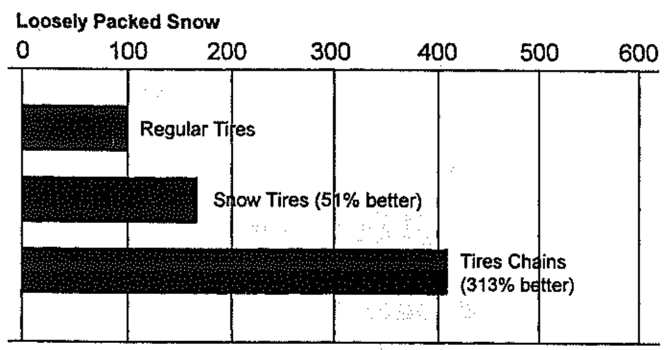
Although the type of tire on your vehicle may have some influence, the roadway surface is generally the determining factor for adhesion. The lower the coefficient of friction, the more slippery the surface.

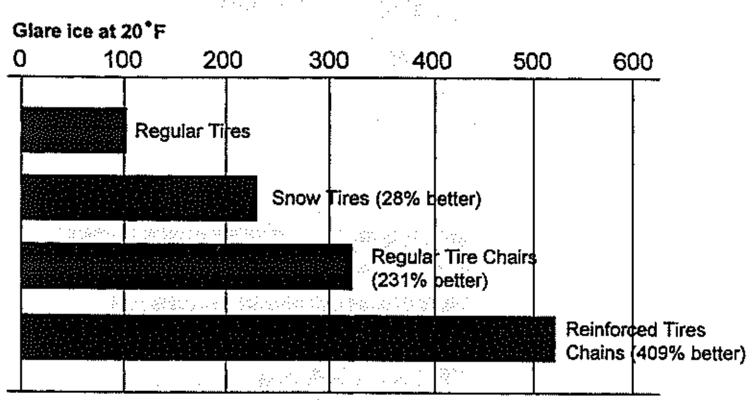
Surface	Approximate Friction
New Concrete or Asphalt	1.00 (least slippery)
Used Concrete or Asphalt	0.80
Wet Concrete or Asphalt	0.60
Dirt or Gravel	0.55
Wet Steel or Wood (Bridge or Railroad Crossing)	0.40
Ice at 0 degrees F	0.25
Ice at 31 degrees F	0.10 (most slippery)

Comparative Stopping Ability - Vehicles Average Braking Distance in Feet 20 MPH



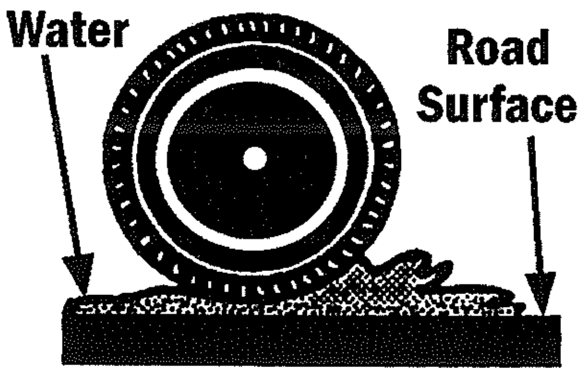
Comparative Starting Ability - Vehicles
Average Traction Ratings
(Regular Tire = 100)





Tires and Hydroplaning

"Hydroplaning" is the term used when a vehicle's tires are skimming along the surface of a wet road. When your vehicle is hydroplaning, the normal contact patch of the tire tread and the road begin to separate.



Three factors that Contribute to the Hydroplaning Effect:

- Water Depth:

  Normally, a quarter inch of water is enough to lead to hydroplaning.

- Tire condition:

  A worn tire can begin hydroplaning in less than ¼ inch of water. As tire pressure decreases, the minimum speed at which total hydroplaning may occur also decreases.

- Vehicle speed:

  The faster the tires are spinning, the more likely that they will skim the surface of the water. Total hydroplaning of a law enforcement vehicle may be expected at about 58 miles per hour. Partial hydroplaning can occur at significantly slower speeds.

Hydroplaning is a serious condition because you are unable to control the vehicle. Any irregularity in the road, or even a strong gust of wind, can lead to a collision. The only effective way to prevent hydroplaning is to reduce your speed appropriately when water begins to accumulate on the roadway.

---

notes

Appendix F

sample rating sheets

Document	Revised	# of Pages	Name of Form
Form1	8/98	3 pages	San Bernardino County Sheriff's Department EVOC Performance Checklist for Driver Development Evaluation 24 Hour Basic and Inservice
Form2	8/98	2 pages	San Bernardino County Sheriff's Department EVOC Performance Checklist for Driver Development Evaluation Eight Hour EVOC Update
Form3	8/98	2 pages	Los Angeles Police Department Emergency Vehicle Operations Course Grade Sheet
Form4	8/98	4 pages	California Highway Patrol Emergency Vehicle Operations Course Driver Development Evaluation
Form5	8/98	3 pages	Los Angeles County Sheriff's Department Emergency Vehicle Operations Course Rating Sheet

SAN BERNARDINO COUNTY SHERIFF'S DEPARTMENT
EMERGENCY VEHICLE OPERATIONS COURSE
PERFORMANCE CHECKLIST FOR
DRIVER DEVELOPMENT EVALUATION
24 HOUR BASIC AND INSERVICE

NAME (Last, First, M.I.)	RANK	DEPARTMENT	DATE

DIRECTIONS:

1. Performance Objective: Given a properly equipped law enforcement vehicle each student, will demonstrate the below performance factors with a minimum score of "80%" in all applicable categories.

2. Evaluation Instructions: Minimally, each student must be observed and graded on those performance factor which are followed by an asterisk (ex: Use of Safety belts *). These are minimum P.O.S.T. requirements. The other performance factors, although equally important, may at the instructors discretion, go unobserved.

3. Grading Scale:

100% = (5)....... Outstanding	85% = (2).................. Satisfactory
95% = (4)....... Excellent	80% = (1).................. Meets minimum standards
90% = (3)....... Good	79% or below = (X).... Unsatisfactory

PHASE I: LANE CHANGE

		GRADE DAY 1	GRADE DAY 2	REMEDIATION		DATE: / / INSTRUCTOR: (PLEASE PRINT)
1. Lane Change*	1					COMMENTS:
2. Threshold Braking* (Day #2 ABS)	2					

100% = (5) 10 runs correct; 80% = (1) 8 runs correct
90% = (3) 9 runs correct 79% = (x) 7 or less runs correct

PHASE II: CORNERING

		GRADE	REMEDIATION		DATE: / / INSTRUCTOR: (PLEASE PRINT)
1. Road position*	1				COMMENTS:
2. Speed judgement	2				
3. Braking accuracy*	3				
4. Apex*	4				
5. Throttle control & accuracy	5				
6. High speed backing					
a. Road position*	6a				
b. Steering smoothness*	6b				
c. Speed judgment*	6c				

SAN BERNARDINO COUNTY SHERIFF'S DEPARTMENT
EMERGENCY VEHICLE OPERATIONS COURSE
PERFORMANCE CHECKLIST FOR
DRIVER DEVELOPMENT EVALUATION
24 HOUR BASIC AND INSERVICE

NAME (Last, First, M.I.)	RANK	DEPARTMENT	DATE

PHASE III: SKID PAN		GRADE		REMEDIATION		DATE:	INSTRUCTOR: (PLEASE PRINT)
		DAY 1	DAY 2			/ /	
1. Use of seatbelts*	1					COMMENTS:	
2. Front wheel skid (Understeer)*	2						
3. Rear wheel skid (Oversteer)*	3						
4. All wheel locked skid*	4						
5. Loss of steering ability*	5						
6. Regains steering control*	6						
7. Advanced steering ability*	7						

PHASE IV: SLOW SPEED MANEUVERS		GRADE	REMEDIATION		DATE:	INSTRUCTOR: (PLEASE PRINT)
					/ /	
1. Use of safety belts*	1				COMMENTS:	
2. Parallel parking*	2					
3. Turn around maneuvers*	3					
4. Offset lanes* (forward)	4a					
Offset lanes* (reverse)	4b					
5. "T" driveway*	5					
6. Steering Serpentine	6					

PHASE V: VEHICLE INSPECTION		GRADE	REMEDIATION		DATE:	INSTRUCTOR: (PLEASE PRINT)
					/ /	
1. Overall inspection/damage*	1				COMMENTS:	
2. Tire condition*	2					
3. All lights & emergency equipment*	3					

PHASE VI: SIREN DEMONSTRATION	ATTENDED	DATE:	INSTRUCTOR: (PLEASE PRINT)
		/ /	

PHASE VII: ABS BRAKING (WET)		GRADE	REMEDIATION		DATE:	INSTRUCTOR: (PLEASE PRINT)
1. ABS braking (wet)	1				/ /	

COMMENTS:

SAN BERNARDINO COUNTY SHERIFF'S DEPARTMENT
EMERGENCY VEHICLE OPERATIONS COURSE
PERFORMANCE CHECKLIST FOR
DRIVER DEVELOPMENT EVALUATION
24 HOUR BASIC AND INSERVICE

NAME (Last, First, M.I.)	RANK	DEPARTMENT	DATE

PHASE VIII, IV, X, IX: CODE 3 & PURSUIT (PLEASE PRINT)

		CODE 3 TRK	CODE 3 SIM	PURSUITS PRI	PURSUITS SEC	PURSUITS SIM	REMEDIATIONS				
1. Use of emergency equipment*	1									CODE 3 TRACK DATE:	
2. Use of radio*	2									CODE 3 TRACK INSTRUCTOR:	
3. Hazard awareness*										CODE 3 TRACK SCORE:	
a. Construction areas	3a									COMMENTS:	
b. Cross traffic	3b									CODE 3 SIM DATE:	
c. Pedestrians	3c									CODE 3 SIM INSTRUCTOR:	
d. Road dips	3d									CODE 3 SIM SCORE:	
e. Flood or wash areas	3e									COMMENTS:	
f. Intersections	3f									PURSUIT TRK DATE:	
4. Road position*	4									PURSUIT TRK INSTRUCTOR:	
5. Throttle control*	5									PURSUIT TRK SCORE:	
6. Steering accuracy*	6									COMMENTS:	
7. Braking accuracy*	7									PURSUIT SIM DATE:	
8. Hand positions *	8									PURSUIT SIM INSTRUCTOR:	
9. Throttle control*	9									PURSUIT SIM SCORE:	
10. Aggressive level*	10									COMMENTS:	

ADDITIONAL INSTRUCTOR COMMENTS:

____

____

____

____

____

____

STUDENT'S OVERALL PERFORMANCE: ______________________

APPROVED AND REVIEWED BY: ______________________

SAN BERNARDINO COUNTY SHERIFF'S DEPARTMENT
EMERGENCY VEHICLE OPERATIONS COURSE
PERFORMANCE CHECKLIST FOR
DRIVER DEVELOPMENT EVALUATION
EIGHT HOUR EVOC UPDATE

NAME (Last, First, M.I.)	RANK	DEPARTMENT	DATE

DIRECTIONS:

1. Performance Objective: Given a properly equipped law enforcement vehicle each student, will demonstrate the below performance factors with a minimum score of "80%" in all applicable categories.

2. Evaluation Instructions: Minimally, each student must be observed and graded on those performance factor which are followed by an asterisk (ex: Use of Safety belts *). These are minimum P.O.S.T. requirements. The other performance factors, although equally important, may at the instructors discretion, go unobserved.

3. Grading Scale:

100% = (5)	Outstanding	85% = (2)	Satisfactory
95% = (4)	Excellent	80% = (1)	Meets minimum standards
90% = (3)	Good	79% or below = (X)	Unsatisfactory

PHASE I: LANE CHANGE

		GRADE DAY 1	GRADE DAY 2	REMEDIATION		DATE: / /	INSTRUCTOR: (PLEASE PRINT)
1. Lane Change*	1					COMMENTS:	
2. Threshold Braking* (Day #2 ABS)	2						

100% = (5) 10 runs correct; 80% = (1) 8 runs correct
90% = (3) 9 runs correct 79% = (x) 7 or less runs correct

PHASE II: CORNERING

		GRADE	REMEDIATION		DATE: / /	INSTRUCTOR: (PLEASE PRINT)
1. Road position*	1				COMMENTS:	
2. Speed judgement	2					
3. Braking accuracy*	3					
4. Apex*	4					
5. Throttle control & accuracy	5					

PHASE III: HIGH SPEED BACKING

		GRADE	REMEDIATION		DATE: / /	INSTRUCTOR: (PLEASE PRINT)
1. Road position*	1				COMMENTS:	
2. Steering smoothness*	2					
3. Speed judgement*	3					

PHASE IV: SKID PAN

		GRADE	REMEDIATION		DATE: / /	INSTRUCTOR: (PLEASE PRINT)
1. Front wheel skid (Understeer)*	1				COMMENTS:	
2. Rear wheel skid (Oversteer)*	2					
3. Loss of steering ability	3					
4. Regains steering control*	4					

SAN BERNARDINO COUNTY SHERIFF'S DEPARTMENT
EMERGENCY VEHICLE OPERATIONS COURSE
PERFORMANCE CHECKLIST FOR
DRIVER DEVELOPMENT EVALUATION
EIGHT HOUR EVOC UPDATE

NAME (Last, First, M.I.)	RANK	DEPARTMENT	DATE

PHASE V: SLOW SPEED MANEUVERS		GRADE	REMEDIATION		DATE: / /	INSTRUCTOR: (PLEASE PRINT)
1. Use of safety belts*	1				COMMENTS:	
2. Parallel parking*	2					
3. Turn around maneuvers*	3					
4. Offset lanes* (forward)	4a					
Offset lanes* (reverse)	4b					
5. "T" driveway*	5					
6. Steering Serpentine	6					

PHASE VI: FINAL PURSUIT/ SIMULATOR CODE 3		GRADE: TRACK PURSUIT	GRADE: CODE 3	REMEDIATION		DATE: / /	INSTRUCTOR: (PLEASE PRINT) (TRACK)
1. Use of emergency equipment* (lights, siren, vary siren)	1					PURSUIT SCORE:	
2. Use of radio*	2					COMMENTS:	
3. Hazard awareness*	3						
Construction areas	3a						
Cross traffic	3b						
Pedestrians	3c					DATE:	INSTRUCTOR: (SIMULATOR)
Road dips	3d					/ /	
Flood or wash areas	3e					SIM SCORE:	
Intersections	3f					COMMENTS:	
4. Road position*	4						
5. Throttle control*	5						
6. Steering accuracy*	6						
7. Braking accuracy*	7						
8. Hand positions *	8					STUDENT'S OVERALL SCORE:	
9. Throttle control*	9					APPROVED BY:	
10. Aggressive level*	10						

ADDITIONAL INSTRUCTOR COMMENTS:

EMERGENCY VEHICLE OPERATIONS COURSE
GRADE SHEET

AGENCY		EVALUATION	FINAL EVALUATION	
LOS ANGELES POLICE DEPARTMENT			PASS	FAIL
NAME (Last, First, M.I.)	SERIAL#	CLASS #	DATE	

WRITTEN TEST SCORE	%

PURSUIT INFORMATION

Final Pursuit Time T/Cs M/Bs Penalty Secs.

Initial Pursuit Time T/Cs M/Bs Penalty Secs.

I. ACCIDENT SIMULATOR (P.O.6.6.5) INST.

RUN #	1	2	3	4	5	1	2	3	4	5	VEH # /
PRESET SIGNAL											SIMULATOR EVALUATION
PRACTICE RUN											
WRONG LANE											PASS
NOT IN LANE											
SLOW/OFF GAS											FAIL
WENT TO BRAKE											
GOOD RUN											REMEDIATED RUNS

Comments: ______ Date: / /

II. VEHICLE CONTROL TECHNIQUES COURSE INST.

	GOOD	FAIR	POOR
1. Adaptability to Two-Handed Steering Method	GOOD	FAIR	POOR
A. Forward			
B. Reverse			
2. Adaptability to Vehicle Control Techniques	GOOD	FAIR	POOR
A. Forward			
B. Reverse			

Comments: ______ Date: / /

III. REVERSE DRIVING (P.O.s 6.6.4,6.6.6,&6.7.1) INST.

	PASS	FAIL	REMEDIATE
1. Overall Control			
2. Speed Judgement			
3. Road Position			

Comments: ______ Date: / /

EMERGENCY VEHICLE OPERATIONS COURSE GRADE SHEET

AGENCY	NAME (Last, First, M.I.)
LOS ANGELES POLICE DEPARTMENT	

IV. VEHICLE PLACEMENT SKILLS INST.	GOOD	FAIR	POOR
1. Parallel Park			
2. Angle Drive			
3. Precision Steering			
4. "T" Driveway			

Comments: ______ Date: / /

V. SKID PAN (P.O.s 6.6.1,&6.6.2) INST.	PASS	FAIL	REMEDIATE
1. Throttle Accuracy			
2. Steering Accuracy			
3. Road Position			
4. P.O.S.T. Performance Objectives			
A. Regains Control of Vehicle in a Skid			
B. Experiences All Wheel Braking Skid			
C. Experiences a Controlled Skid			

Comments: ______ Date: / /

VI. OPERATIONAL TRACK (P.O.s 6.6.4,6.6.6,&6.7.1) INST.	PASS	FAIL	REMEDIATE
1. Speed Judgement			
2. Road Position			
3. Threshold Braking – Straight Line Stop (ABS Activated)			
Prior to a Turn			
4. Throttle Accuracy			
5. Steering Accuracy			
6. Weight Transfer/Spring Loading			

Comments: ______ Date: / /

VII PURSUIT COURSE (P.O. 6.7.2) INST.	PASS	FAIL	REMEDIATE
1. Safe Operation and Control of the Vehicle			
2. Performance Under Semi-Stress Conditions			
3. Radio Usage			
4. Headlights, Emergency Lights, Siren			

Comments: ______ Date: / /

FINAL PURSUIT INFORMATION

Final Pursuit Time ______ T/Cs ______ M/Bs ______ Penalty Secs. ______

EMERGENCY VEHICLE OPERATIONS COURSE
DRIVER DEVELOPMENT EVALUATION

AGENCY			CTC:	
CALIFORNIA HIGHWAY PATROL				
NAME (Last, First, M.I.)		RANK	DEPARTMENT	STATION

PHASE		UNACCEPTABLE	NEEDS IMPROVEMENT	ACCEPTABLE	ABOVE AVERAGE

I. VEHICLE MAINTENANCE CLASS DATE: / /

Remarks: ______________________________

______________________________ ☐ PASS

______________________________ Instructor: ______________________________ ☐ FAIL (See Attached)

II. DEFENSIVE DRIVING DEMONSTRATION DATE: / /

Remarks: ______________________________

______________________________ ☐ PASS

______________________________ Instructor: ______________________________ ☐ FAIL (See Attached)

III. VEHICLE PLACEMENT DATE: / /

1.	Rear Wheel Cheat				
2.	Slip Angle				
3.	Steering Control				
4.	Braking				
5.	Parallel Parking Technique				
6.	Bumper Alignment				
7.	Backing				
8.	Front End Swing				
9.	Aggression				
10.	Judgment				

Remarks: ______________________________

______________________________ ☐ PASS

______________________________ Instructor: ______________________________ ☐ FAIL (See Attached)

IV. SKID CONTROL DATE: / /

1.	Throttle Control				
2.	Steering Control				
3.	Countersteering				
4.	Lateral Weight Control				
5.	Roadway Position				
6.	Eye Placement				
7.	Understeer Control				

Remarks: ______________________________

______________________________ ☐ PASS

______________________________ Instructor: ______________________________ ☐ FAIL (See Attached)

V. SKID RECOVERY DATE: / /

Remarks: ______________________________

______________________________ ☐ PASS

______________________________ Instructor: ______________________________ ☐ FAIL (See Attached)

EMERGENCY VEHICLE OPERATIONS COURSE
DRIVER DEVELOPMENT EVALUATION

AGENCY	NAME (Last, First, M.I.)
CALIFORNIA HIGHWAY PATROL	

PHASE				UNACCEPTABLE	NEEDS IMPROVEMENT	ACCEPTABLE	ABOVE AVERAGE
VI.	PERFORMANCE DRIVING DATE: / /						
	1.	Roadway Position					
	2.	Closure Rate Judgment					
	3.	Steering Control					
	4.	Throttle Control					
	5.	Braking					
	6.	Hand Placement					
	7.	Countersteer (If Applicable)					
	8.	Understeer Control					
	9.	Eye Placement					
	10.	Aggression					
	11.	Lateral Weight Control					
	12.	Tension					

Remarks: ______________________________

____

______________ Instructor: ______________

☐ PASS

☐ FAIL (See Attached)

VII. ADVANCED PERFORMANCE DRIVING DATE: / /

Remarks: ______________________________

____

______________ Instructor: ______________

☐ PASS

☐ FAIL (See Attached)

PHASE				UNACCEPTABLE	NEEDS IMPROVEMENT	ACCEPTABLE	ABOVE AVERAGE
VIII.	DEFENSIVE DRIVING DATE: / /						
	1.	Rear Wheel Cheat					
	2.	Slip Angle					
	3.	Steering Control					
	4.	Braking					
	5.	Bumper Alignment					
	6.	Parallel Parking					
	7.	Backing					
	8.	Front End Swing					
	9.	Aggression					
	10.	Hazards					
	11.	Vehicle Hazards					
	12.	Rules of the Road					

Remarks: ______________________________

____

______________ Instructor: ______________

☐ PASS

☐ FAIL (See Attached)

EMERGENCY VEHICLE OPERATIONS COURSE
DRIVER DEVELOPMENT EVALUATION

AGENCY	NAME (Last, First, M.I.)
CALIFORNIA HIGHWAY PATROL	

PHASE				UNACCEPTABLE	NEEDS IMPROVEMENT	ACCEPTABLE	ABOVE AVERAGE
IX.	11-99 DATE: / /						
	1.	Roadway Position					
	2.	Eye Placement					
	3.	Throttle Control					
	4.	Steering Control					
	5.	Closure Rate Judgment					
	6.	Understeer Control					
	7.	Tension					
	8.	Countersteer (If Applicable)					
	9.	Braking					
	10.	Safety Aspects					
	11.	Aggression					

Remarks: ______

☐ PASS

Instructor: ______ ☐ FAIL (See Attached)

PHASE				UNACCEPTABLE	NEEDS IMPROVEMENT	ACCEPTABLE	ABOVE AVERAGE
X.	CODE 3 DATE: / /						
	1.	Roadway Position					
	2.	Eye Placement					
	3.	Throttle Control					
	4.	Steering Control					
	5.	Closure Rate Judgment					
	6.	Braking					
	7.	Understeer Control					
	8.	Countersteer (If Applicable)					
	9.	Tension					
	10.	Radio					
	11.	Safety Aspects					
	12.	Aggression					

Remarks: ______

☐ PASS

Instructor: ______ ☐ FAIL (See Attached)

XI. LEGAL INTERVENTION and ABS DATE: / /

Remarks: ______

☐ PASS

Instructor: ______ ☐ FAIL (See Attached)

EMERGENCY VEHICLE OPERATIONS COURSE
DRIVER DEVELOPMENT EVALUATION

AGENCY	NAME (Last, First, M.I.)
CALIFORNIA HIGHWAY PATROL	

PHASE			UNACCEPTABLE	NEEDS IMPROVEMENT	ACCEPTABLE	ABOVE AVERAGE

XII. NIGHT CODE 3 **DATE: / /**

Remarks: ______________________________

______________________________ ☐ PASS

______________ Instructor: ______________ ☐ FAIL (See Attached)

XIII. COMMENTARY DRIVING **DATE: / /**

Remarks: ______________________________

______________________________ ☐ PASS

______________ Instructor: ______________ ☐ FAIL (See Attached)

EMERGENCY VEHICLE OPERATIONS COURSE
OVERALL EVALUATION

Rating: ______________________________

Written Test Score: ______________________________

Instructor: ______________________________ Date: ______________

Cadet Signature: ______________________________ Date: ______________

EMERGENCY VEHICLE OPERATIONS COURSE
RATING SHEET

AGENCY			COURSE HOURS	
LOS ANGELES COUNTY SHERIFF'S DEPARTMENT			☐ 8 ☐ 12 ☐ 16 ☐ 24 ☐ ____	
NAME (Last, First, M.I.)	RANK		DEPARTMENT	STATION

Employee Number

Middle First Last

NAME

DATE(S)

		BELOW STANDARD	ACCEPTABLE	ABOVE AVERAGE	
I.	**BASIC STEERING COURSE (P.O.S.T. 6.6.4)**				
A.	Adaptability to Two-Handed Steering Method				
B.	Smoothness and Coordination				

Remarks: ____________________

____

____________________ Instructor: ____________________

II.	**VEHICLE PLACEMENT – SKILL COURSE (P.O.S.T. 6.6.4)**				
A.	U-Turn				
B.	Parallel Park				
C.	Boot-Leg Turn				
D.	Angled Driveway				
E.	Precision Steering				
F.	"T" Driveway				
G.	Reverse Maneuvers				
H.	Wheel Placement (Bott Dots)				
I.					

Remarks: ____________________

____

____________________ Instructor: ____________________

III.	**SKID RECOVERY and BRAKING (P.O.S.T. 6.6.1/6.6.2/6.6.3)**				
A.	Steering Control				
B.	Throttle Control				
C.	Coordination				
D.	Speed Judgment				
E.	Braking				

Remarks: ____________________

____

____________________ Instructor: ____________________

IV. COLLISION EVADER SIMULATOR (P.O.S.T. 6.6.5)

1.	Too Fast
2.	Too Slow
3.	Hit Cone(s)
4.	Wrong Lane
5.	Improper Steering
6.	Improper Braking

Speed MPH	Run I	Run II	Run III	Run IV
30				
35				
40				
40				

A.	Steering Control				
B.	Throttle Control				
C.	Coordination				
D.	Physical Reaction				
E.	Vehicle Control				
F.	Braking				

Remarks: ____________________

____

____________________ Instructor: ____________________

EMERGENCY VEHICLE OPERATIONS COURSE
RATING SHEET

AGENCY		COURSE HOURS	
LOS ANGELES COUNTY SHERIFF'S DEPARTMENT		☐ 8 ☐ 12 ☐ 16 ☐ 24 ☐ ____	
NAME (Last, First, M.I.)	RANK	DEPARTMENT	STATION

V. REVERSE DRIVING (P.O.S.T. 6.6.4)

		BELOW STANDARD	ACCEPTABLE	ABOVE AVERAGE	
A.	Steering Control				
B.	Throttle Control				
C.	Coordination				
D.	Speed Judgment				
E.	Road Position				
F.	Braking				

Remarks: ______________________________

____

______________________ Instructor: ______________________

VI. TURN-AROUND MANEUVER

		BELOW STANDARD	ACCEPTABLE	ABOVE AVERAGE	
A.	Steering Forward				
B.	Steering-Reverse-Rolling Friction Principle				
C.	Road Position				
D.	Brake Application				
E.	Front End Swing				
F.	Rear Wheel Cheat				
G.	Speed Control				
H.	Visual Contact with Obstacles to Rear				
I.	Smoothness and Coordination				

Remarks: ______________________________

____

______________________ Instructor: ______________________

VII. PRECISION DRIVING COURSE (Track) (P.O.S.T. 6.6.4 – 6.7.1)

		BELOW STANDARD	ACCEPTABLE	ABOVE AVERAGE	
A.	Smoothness and Coordination				
	1. Steering Control				
	2. Throttle Control				
	3. Weight Transfer (Spring Loading)				
B.	Turns				
	1. Road Position – Entering				
	2. Road Position – Exiting				
	3. Speed				
C.	Adaptability				
	1. Brake Use				
	2. Radio Use				
	3. Performance under Semi-Stress Conditions				
	4. Able to Perform as Instructed				

Remarks: ______________________________

____

______________________ Instructor: ______________________

Employee Number

Middle

First

Last

NAME

DATE(S)

EMERGENCY VEHICLE OPERATIONS COURSE
RATING SHEET

AGENCY				COURSE HOURS
LOS ANGELES COUNTY SHERIFF'S DEPARTMENT				☐ 8 ☐ 12 ☐ 16 ☐ 24 ☐ ____
NAME (Last, First, M.I.)		RANK	DEPARTMENT	STATION

Employee Number

Middle

First

Last

NAME

DATE(S)

			BELOW STANDARD	ACCEPTABLE	ABOVE AVERAGE	
VIII.		**CITY STREET HAZARD COMPLEX (Pursuit) (P.O.S.T. 6.7.2)**				
	A.	Smoothness and Coordination				
		1. Steering Control				
		2. Throttle Control				
		3. Weight Transfer (Spring Loading)				
	B.	Turns				
		1. Road Position – Entering Curve				
		2. Road Position – Exiting Curve				
		3. Judgment of Speed and Distance				
	C.	Adaptability				
		1. Brake Use				
		2. Radio Use				
		3. Siren Use				
		4. Performance under Semi-Stress Conditions				
	D.	Overall Vehicle Control (SAFETY)				

Remarks: ____

____

____________________ Instructor: ____________________

IX. COMMENTARY DRIVING

Remarks: ____

____

____

____

____________________ Instructor: ____________________

IX. DEFENSIVE DRIVING COURSE (P.O.S.T. 6.6.4 – 6.7.)

Remarks: ____

____

____

____

____________________ Instructor: ____________________

X. EVALUATION and COMMENTS

WRITTEN EVALUATION:	________%				
OVERALL EVALUATION:	________%				

ADDITIONAL TRAINING
REQUESTED: ☐ Yes ☐ No APPROVED: ____________________

COMMENTS: ____

____

____